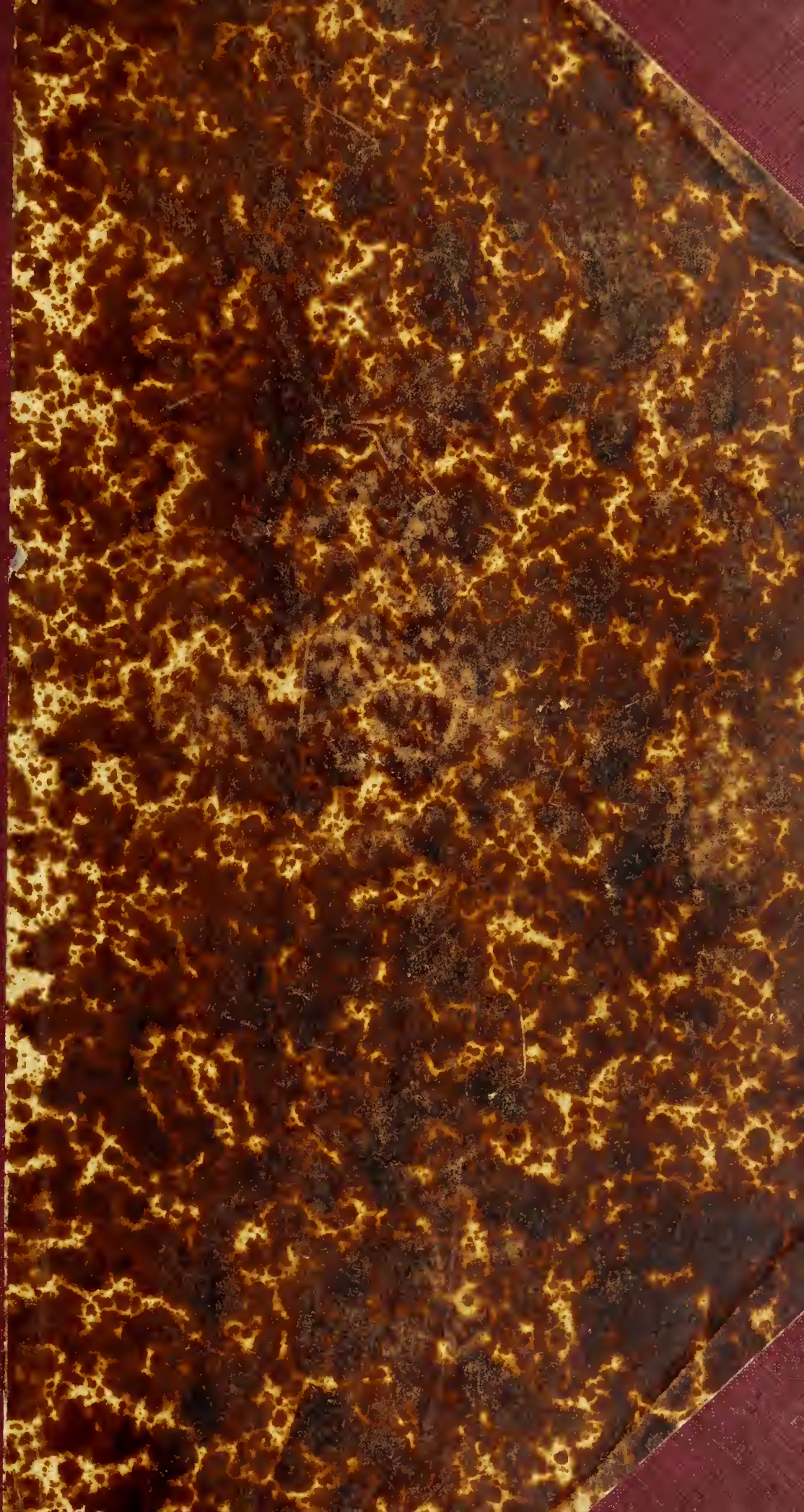


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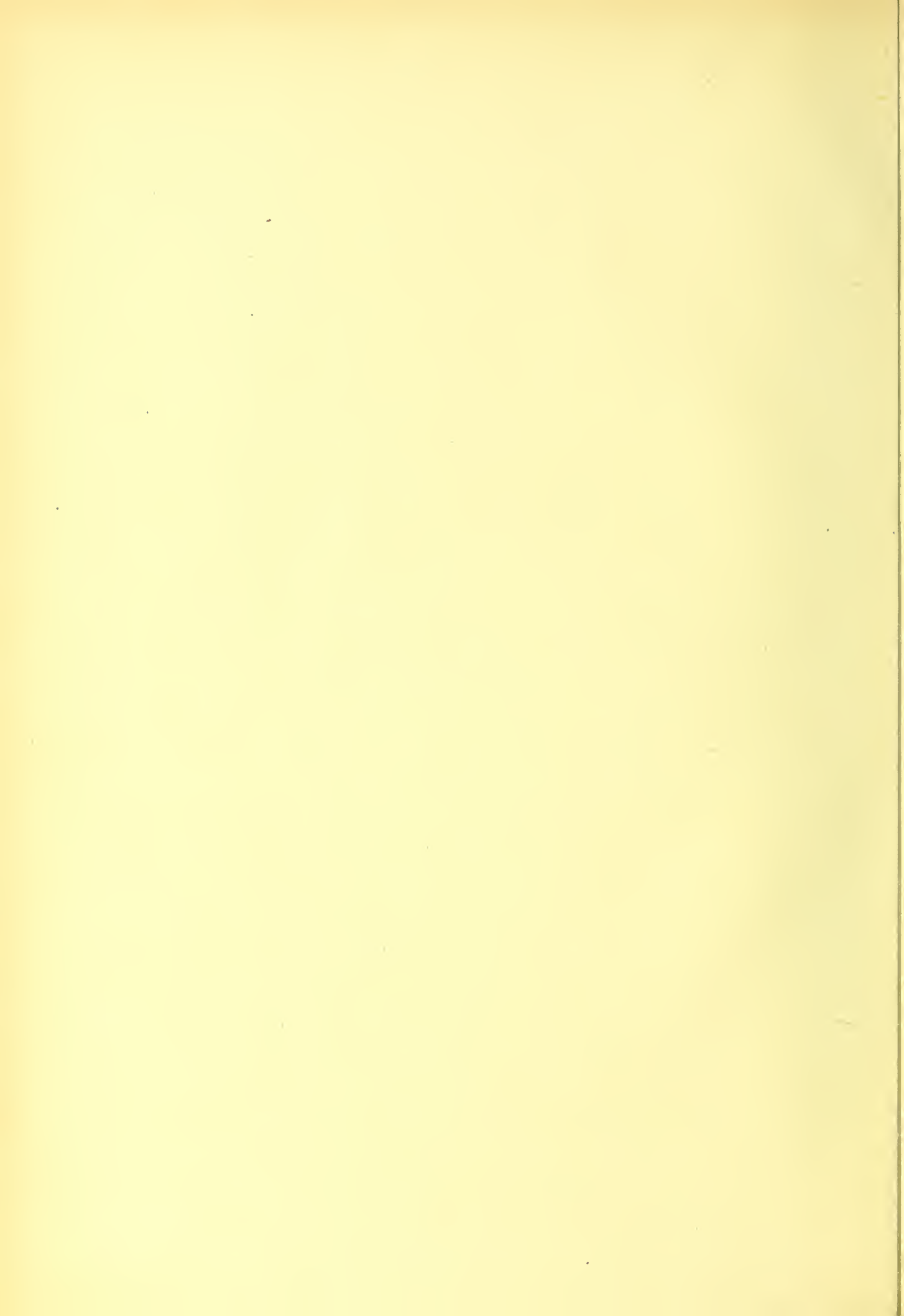


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EDITORIAL NOTES

NEW YEAR—NEW OPPORTUNITIES.

With its three hundred and sixty-five clean, unmarked pages, a new year has come to us to use or abuse; to write things upon them that will endure and be of benefit to the people, to the profession of which we are humble units, to the communities in which we severally live and work and have our influence; or to be left blank, soiled, scrawled upon or smudged. There is enough to do, God knows, in the way of helping ourselves and of helping the people whose needs and ills and sufferings we tend; and we must not forget that in helping ourselves to a better living, to a fuller life, we are helping the people. A physician poor in purse is handicapped to the extent that he cannot provide himself with the proper things of knowledge or material equipment with which to give the best that is in him to his patients. This we should not fail to recognize or to make our patients understand, as we have opportunity from time to time. There is nothing in the world more dangerous than a cheap lawyer except a cheap doctor. Let the new year see you follow more accurate and careful business methods in dealing with the business side of your work; no one respects the man he can defraud or cheapen, and your patients will respect you more for it. Do not let your accounts run for a year or two and then try to collect what you can; send out your bills promptly and after a year of moderate effort to collect, see that the debtor is forced to pay, if he is in a position to do so. Orderliness in business methods will have a beneficial effect upon your professional work, for it will induce more orderly thinking. Also, it will

provide you with more income with which to get books and journals and instruments, or enable you to travel and visit other physicians and see how their work compares with your own; where you fall short and where you go ahead. Above all, do not forget to do your own best work for the benefit of your own county medical society; it will help you and will help every member of the profession and will stimulate a greater respect for the entire profession in your community. Nothing hurts us all so much as rows amongst medical men themselves. A fight between two physicians not only hurts them both, no matter which one is in the right, but it hurts the whole medical profession by belittling its members in the eyes of the community. In every county where you find a good, active, well-knit county medical society, there you will find the medical profession looked up to and respected. There is plenty to be written on these clean pages of this year's new book; will you write something worth while?

UNION HEALTH DEPARTMENTS.

All over the country cities are engaged in becoming acquainted with themselves by means of efficiency surveys. These surveys have grown out of the perfectly natural desire of the taxpayer to know how his money is being spent, and whether he is getting value received. Wherever these surveys have been instituted, the health department is primarily the one which shows marked weakness in comparison to the other departments of administration. The reason of this is evident. As long as city councils and county boards of supervisors have the impression that the chief functions of a health department are limited to the placarding and fumigation of habitations after certain diseases, and the investigation and removal of the causes of bad smells, so long will the appropriations for health work continue to be inadequate.

The medical profession is largely to blame for this impression. It needs a vision far beyond that of the man trained in curative medicine, to see the intense broad social significance of preventive medicine. Workers for social betterment have long had this vision and forced a tardy recognition on the medical profession. There are many phases of the subject that are slowly slipping from us due to our Rip Van Winkle sleep of a generation past. At the Summer Session of the University of California there was a psychological clinic running without an M. D. degree on the instructing staff. This is only an example of how the broad social preventive fields have escaped our tillage, and their fruits will be garnered by others than the sons of Aesculapius.

There are many reasons why the medical man does not, *ipso facto*, make a good health officer. He is, it is true, good raw material, but he needs much training. First of all, he must be unhampered by a private practice; secondly, he must have the ability to view mankind in the mass rather than as individuals; and finally he must be trained to the new profession. Within the

last few years, non-medical men, trained at the Massachusetts Institute of Technology under Sedgwick, have been making good as health officers in various parts of the country. Now through affiliation with Harvard University in the new School for Health Officers, the Institute will be able to further broaden the viewpoint of its students. These M. I. T. men have done well as health officers because they have been employed on a "full time" basis. Full time may not mean that all of a man's working day is given to the health department, but it does mean that all his time is given to public service, and that the exactions of a private practice can never crowd aside the public welfare.

It is apparent that the small city cannot afford to pay for the services of the "full time" trained health officer. In California we can meet the situation exactly as the educational authorities have done in the formation of union high schools. There can be no objection to the formation of union health districts within the counties. The health officers appointed under this plan would be county deputies for their several districts, as well as health officers for one or more cities within the district. The best feature of this plan is that it could be carried out without another act of legislature.

J. N. F.

CIVIL SERVICE AND PUBLIC HEALTH.

When a progressive city sets out to place its administrative offices on a basis of efficiency, the health office is only too often overlooked. It is, therefore, very gratifying to find the City of Oakland reorganizing its health department and placing at its head a Health Director chosen under civil service regulations. It indeed marks a new epoch in the public health work of a city when the administration demands that health officials shall give their entire time to the work and shall be specialists in preventive medicine. When Oakland's plan was first announced the skeptics said, "The salary offered will not hire an able man unless he has the privilege of practicing medicine at the same time," and "How can a Civil Service Commission made up of lawyers and business men choose a Health Director?" The number of applicants from distant parts of the United States showed that there are plenty of men who are eager for public service in preventive medicine even if salaried positions do not offer the financial possibilities of surgery or curative medicine. The Civil Service Commission recognized its limitations better than did the skeptics and appointed an advisory committee to draw up questions, mark answers, and pass upon experience and personal qualifications. This committee consisted of the Secretary of the State Board of Health, the Professor of Sanitary Engineering in the University of California, the Health Officer of Oakland, an Oakland physician, and the Director of the State Hygienic Laboratory. These men were glad to help place the

choice of health officials on a basis of executive ability and expert knowledge. The United States Public Health Service assisted by holding the examination in the eastern states and forwarding the papers.

The Director has the health of a splendid city in his charge and we wish him every success. Chosen on merit, he has our confidence, and we look to him for a constructive and efficient public health administration for Oakland. W. A. S.

PUBLIC HEALTH AND INTERFERENCE.

It seems a curious fatality to announce in a special public health number of the JOURNAL the fact that the Secretary of the State Board of Health has resigned his office because of the intolerable interference with his work by some petty-minded laymen who really have nothing to say about it but who have usurped the right to say how every dollar of the money spent by the Board of Health shall be expended. Were it not a matter of the greatest importance to the people of the state, it would be farcical in the extreme. Dr. Snow has for several years served the state as Secretary of the State Board of Health and has served it intelligently and faithfully and well; we certainly are sorry to see him obliged, by such petty and mutton-headed interference, to sever his connection with the health work of the state.

EMINENT MEDICAL AUTHORITY.

Most of us have laughed with *Life*. All of us have been disgusted with its malignant attacks on preventive medicine. But once in a while we have the chance to laugh at *Life*. On page 620 of the present volume is published a communication entitled "Rabies: An Exposé," signed by Charles E. Page, M. D., of Boston, which as a monumental mass of ignorant misinformation deserves more than passing attention. Naturally, after reading this stuff, the medical man would like to know the medical qualifications of the writer. The A. M. A. Directory contains the following record:

Page, Chas. E. (b.1840) -N.Y.* (Y of P) 120 Tremont St., 10-3. We can forgive much ignorance to a man aged 73 who holds his license by virtue of years of practice, and whose medical school or graduation cannot be determined. His opinion ought to be about as valuable, and his scientific information about as accurate as that of the ordinary newspaper reporter at twenty per. In this instance, however, it happens that the newspaper information regarding the isolation of the rabies organism is correct, and the "doctor" is mistaken.

Negri, in 1903, discovered the bodies which bear his name, in the brains of rabid animals. Noguchi, in 1913, has succeeded in isolating these same bodies, or growing them on artificial media outside the animal brains. A little more attention to microbiology in "Dr." Page's reading would have showed him that there was nothing inconsistent in the newspaper statement. Your

true sentimentalist, however, does not weigh evidence, nor search for facts. The opportunity to say something was eagerly seized upon, and *Life* was silly enough to print without investigation. But what can we expect of a man who writes "Pasteur serum"?

As far as the rest of the article is concerned "it is to laugh." We have been bitten by hundreds of mosquitoes and have never had malaria; and (we blush to relate) have had bloody encounters with several fleas without contracting the plague. We have also been bitten by a dog and viewed the bite without apprehension, but that was before some kind-faced tourist from the East dumped a rabid dog into Southern California. At present we are bound to confess that, even if the dog assured us that he had brushed his teeth before biting us, we would hastily pour nitric acid on the bite, and "beat it" for the Pasteur Institute.

J. N. F.

SCHOOL OF HYGIENE AND SANITATION.

There exists at present no school of hygiene and sanitation on the Pacific Coast, a lack which we have every reason to believe will soon be supplied by the establishment of such a school in the University of California. The tardiness of the west in recognizing so important a field relating to the health of the public and in organizing an institution for the training of specialists in these lines, is more apparent than real, for the courses in public health given at the University are remarkably comprehensive. Indeed, these courses, which are described in a circular accessible to all who are interested, are so numerous and varied that the subjects making up a curriculum in public health are already quite completely covered. Comparing the number and variety of the courses offered with those in similar departments of eastern universities, we find that the University of California is in no particular behind them, and in some instances has more adequate facilities for instruction. At the present time the university provides instruction in hygiene for three classes of students. First: Students desiring to be taught the elementary principles of health conservation, both individual and public. Second: Students of vocations not directly associated with the conservation of public health, but who would be brought in close relation with some of its aspects. Third: Students desiring a provisional training as bacteriologists, health visitors, sanitary inspectors, or health officers.

For example: from two to five half-year courses are given under each of the following subdivisions: Communicable Diseases; Child Hygiene and Eugenics; Sanitary Engineering; Vital Statistics and Social Economics; Industrial Hygiene; Public Health Laboratory; Sanitary Inspection, and Public Health Administration. The above instruction is given in eleven different departments in the University.

Official recognition of this work as it is now done, executive authorization, and provision for a proper certificate or degree for students finishing

the outlined courses, are really all that is necessary for transforming what is now a curriculum into a veritable school of hygiene and sanitation at the university.

VERY IMPORTANT TO YOU!

Two very important and far reaching economic conditions have their beginning this year of 1914. One is the new income tax law and the other is the state "Workmen's Compensation, Insurance and Safety Act," which goes into effect January 1st. In regard to the income tax, every physician should carefully study his own income and more particularly his own expenses. Under the law, expenses necessary for the conduct of one's occupation may be deducted from the gross income; no small part of a physician's expenses are those required by the nature of his occupation and as such are not to be included in his taxable income. The *Journal* of the A. M. A., in a recent issue, had an excellent editorial on this subject and particularly emphasized the fact that the law will have one good effect upon physicians, at least, for it will force them to be more accurate in the matter of their accounts. It is probably true that a good many doctors do not know either the exact amount of their earnings or the amount they spend as a legitimate cost of doing business. In the smaller towns the office is often in the home; some portion of the rent should be allowed. Some portion or all of the telephone charges, cost of running an automobile, etc., should certainly be charged off as well as books, journals, drugs and supplies, etc., and of course all unpaid accounts. This matter should be given careful thought and accurate accounts should be kept. Care in business methods will secure an increase in the income of any physician and the income tax law will undoubtedly force a more careful and systematic method of keeping the physician's accounts.

"SQUEEZE THE DOCTOR" AGAIN!

When commercialism comes into contact with professionalism, it almost invariably wins out. Heretofore we have had to fight commercialism in the shape of contract practice as organized by private enterprise and conducted more or less on the retail plan. With the coming of the "Workmen's Compensation, Insurance and Safety Act," however, we are confronted by commercialism on a wholesale scale and contract practice extended to the limit. The law is very complex and far reaching and it will take some time to find out exactly what it really means in many ways and just how it is going to work out. Some few essential points are pretty clear, however. All employees, except a few classes, must be cared for by the employer in the event of injury by accident and the salary must be paid during forced absence from work. Of course, a considerable number of insurance companies will be in the field to write policies insuring the employer against loss; the employer will pay a certain fee to the company and in the event that any employee is injured or killed, the insurance

company will pay what is required and not the employer. Part of the act makes the state, or its commission, into an insurance company for the purpose of writing this form of insurance, and as the rates of premiums, etc., will probably be about the same with all the companies and the state, it is not necessary to separate the state from the companies in discussing the matter.

The physician is directly interested in this proposition because these accident cases will have to be treated by a physician and he will be paid by an insurance company. Insurance companies are notorious for the small fees they pay for the work they require, and are we to assume that they are going to be any more liberal to the physician under these new conditions than formerly? Hardly. Already they have formulated tentative schedules of fees to be paid and it is a question whether any competent man would do the work for the meager reward offered. This question is of the greatest importance to all of our members and should be taken up at once by every county society in the state. The work is just starting and the time to adjust the matter of fees is right now, at the beginning, and not after it has gone along for some time and a cheap fee schedule has been saddled upon us. The argument is made, and must be considered, that whereas the fees allowed are not up to those generally charged, still the doctor is *always* paid and not just sometimes paid, as when he deals with a patient direct. But is that enough of an argument to satisfy a fee of say \$12.50 for setting a fracture of the arm or leg and a fee of \$1.00 per visit for subsequently treating that fracture? These are about the fees which will be offered, at least for the time being.

Fees will be low because the insurance companies, in order to get the business from the employer, will charge as low a premium as they possibly can—and squeeze the money out of the physicians who will have to do the actual work. It certainly looks very much as though it were going to be the same old insurance game of making the doctor pay the profits instead of making the business man who takes out the insurance pay the doctor what he is justly entitled to and pay the insurance company its profit. The only place where the squeeze can come is in the fees paid out, and we can be mighty sure that the companies will not pay physicians a single dollar more than they are compelled to; at least, they never have!

Another menace is the diverting of patients. Already the companies are getting together staffs of physicians who are to handle all the work for their respective companies. A man is injured at his work and instead of going to his regular physician or to one he might have a preference for, he is sent to the company's contract doctor. How is this going to work out? And do not forget that the state itself is in this game and is going to run the insurance companies pretty hard, therefore making it a competition to keep expenses down—and squeeze the doctor! On the other hand it is being urged that it is the commercial necessity of the insurance company to get the injured person well as soon as possible and therefore they must have thoroughly

competent medical men doing their work. Will it be found that men who are able to give the best of surgical service will do so for the small fees offered?

To allow this new form of contract work to get beyond our control would be a disaster indeed, and unless the physicians in our various county units take the question up at once, it is very probable that in a year or two they will find it thoroughly saddled upon them and with a fixed scale of fees that will be ridiculously low. It was a long, hard fight to get many of the insurance companies to pay a minimum fee of \$5.00 for a life insurance examination. The accident companies have been following a schedule of very small fees for a long time, but the amount of the work has not been very great. Now, however, the work becomes considerable; it is estimated that some 2000 accidents a month will come under this act and a very large percentage of that number will be handled by the insurance companies.

Are we going to calmly accept what some one else is willing to offer or are we going to have a voice in fixing the amount of the fees that shall be paid to us for our services? That is the question, and the sooner we begin to discuss it seriously the better off we shall be in the long run. The actual fee schedule has not been finally determined by the insurance companies and it cannot be fixed for some few months, for it is not known how the act will work out nor how little physicians can be paid; but rest assured of one thing—the physician will be paid the smallest fee that the insurance companies can get him to accept! If all the members of the various county units will stand together in this matter, it is certain that satisfactory fees will be paid and that the financial burden will be placed where it belongs—on the business man employer, and not where *the attempt will certainly be made wrongfully to place it*—on the physician.

LOOK OUT FOR THIS MAN.

A young Greek of sallow complexion, with deep-set very black eyes and very dark curly hair, about 5ft. 5 in. in stature, and of somewhat of a hang-dog look on his face is making visits to offices of doctors under the plea of being ill. On one occasion he has complained of appendicitis, on another of having syphilis and of having taken treatment for the latter. After getting the doctor interested in his case, he states that he wishes an operation or a cure but has no money with him. He then, with a very innocent air, states that he has several hundred dollars in a safe deposit box in Sacramento, and if he could get railroad fare to get to Sacramento, he would bring the money next day.

To my definite knowledge, he has collected sums varying from \$3.00 to \$5.00 from four different physicians. The four are willing to be models if the rest of the profession does not suffer. A word to the wise.

Very truly yours,

WILLIAM C. VOORSANGER, M. D.

ORIGINAL ARTICLES

RABIES IN SAN FRANCISCO WITH NOTES ON SOME RECENT ADDITIONS TO OUR KNOWLEDGE OF THE DISEASE.*

By R. G. BRODRICK, M. D., Health Officer, San Francisco.

Since the widespread prevalence of rabies has produced numerous articles on the subject, the usual generalities will be omitted and attention directed to a consideration of the subject as indicated by title.

It is now about four years since the beginning of the present epizootic of rabies in California began in Los Angeles. Previous to that time a small outbreak occurred in Los Angeles in 1898,¹ which was suppressed by a muzzling ordinance. A few cases also occurred in 1906 among the animals of the Soldiers' Home near Los Angeles.

Rabies first appeared in San Francisco in October 1911, when one case was reported by a veterinary surgeon. No other cases were reported until February 1912, since which time there has not been a month, hardly a week, in which one or more cases were not reported. From the middle of February 1912, to August 31, 1913, the laboratory of the San Francisco Board of Health has made 546 examinations for rabies, of which 355 were positive. The number and kind of animals affected was as follows:

Human	8
Dogs	328
Cats	11
Goats	4
Cows	1
Horses	2
Calves	1

The incidence of rabies by months is shown in the following table:

Month (1912)	Animal		Human	
	Positive	Negative	Positive	Negative
February	11	6	—	—
March	34	18	1	—
April	69	23	1	—
May	47	14	—	—
June	28	13	1	—
July	20	10	1	—
August	17	10	—	—
September	13	11	—	—
October	9	8	—	—
November	5	5	1	—
December	12	11	—	—
(1913)				
January	9	7	—	—
February	21	16	1	—
March	23	12	—	1
April	13	10	—	—
May	5	5	2	—
June	3	5	—	—
July	4	—	—	—
August	3	4	—	—
Total	346	188	8	1

Beginning in February 1912, the Pasteur treatment for the prevention of rabies has been administered free to suitable cases in the laboratory of

the San Francisco Department of Public Health, the total number treated to date being 187. Dividing this series of bites into two classes, those in which rabies in the biting animal was proved microscopically, and those in which it was not, we have 148 in the first group and 49 in the second. The location of the bite and whether or not cauterized is shown in the table, the number of bites being slightly in excess of the patients because some were bitten in more than one place:

Negri Bodies Demonstrated in the Biting Animal.

Abrasion or contact only.....	13
Head and face.....	8
Upper extremities.....	99
Lower extremities.....	28
Total	148
Wounds cauterized.....	61
Wounds not cauterized.....	73
Not recorded.....	11
Total	145
Complications:—	
Facial paralysis.....	1
Deaths from rabies.....	3

Total treated..... 187

Negri Bodies Not Demonstrated in the Biting Animal.

Abrasion or contact only.....	2
Head and face.....	3
Upper extremities.....	25
Lower extremities.....	17
Breast	1
Back	1
Total	49
Wounds cauterized.....	36
Wounds not cauterized.....	10
Not recorded.....	3
Total	49

Complications, none.

Nine cases of human rabies, all resulting fatally, have been observed in San Francisco, three of which had received the Pasteur treatment. Two of these cases, occurring early in our series, were old men and received the mild scheme of treatment. One showed symptoms of rabies on the eighteenth day of treatment, too early for any immunity to have been established, and the other developed symptoms four days after having completed the treatment. A consideration of the case histories of this series of nine cases shows that in those who had received the Pasteur treatment, the course of the disease was much milder and prolonged than in the untreated cases. The histories of two of the cases are here given as being representative, as well as illustrating the modifying effects of treatment.

Case 9. J. B., child, age 4 years, resided with her parents in this city, where they were visiting, their permanent residence being in the East.

The child was bitten on April 25th by a dog, who also bit another child, a cat and a horse. The dog was taken to the pound where it died April 26th and was examined at this laboratory, Negri bodies being found. The bite, a very severe one of the face about an inch below the right eye, was cauterized within half an hour by Dr. Garlick. The child was placed under the Pasteur treatment within 24 hours with fresh virus from the State

* Read before the Fifth Annual Conference of State, County, and Municipal Health Officials, Venice, October 6 to 11, 1913.

Hygienic Laboratory, the intensive scheme of the U. S. Hygienic Laboratory being followed. The course of treatment was uneventful, being completed on May 16th. On May 20th, four days after the completion of the treatment, she became ill, the principal symptom being fever, and was removed to the Hahnemann Hospital on May 23d.

Symptoms and course of the disease: Friday, May 23rd, the temperature was 103.6 degrees at 3:30 p. m. and 105.2 degrees at 8:30. Patient was restless and nervous, slept at intervals and took both milk and water. May 24th—the temperature was 104.6 degrees at 6 a. m., 104.2 degrees at 9, 103.6 degrees at 12, 100 degrees at 6 p. m. Respiration around 34. Took water and milk in small quantities and at frequent intervals. Slept frequently but would often start up suddenly, limbs twitching. Very restless most of the time. Perspiring freely at noon. In the afternoon complained of headache but rested more quietly.

May 25th—The temperature ranged from 106.6 degrees in the morning to 105.8 degrees in the evening; respiration 40 to 56, pulse around 130. Patient slept very little, was restless, moaning occasionally and had twitching of face and limbs. Was given small quantities of liquids, but at about 11 p. m. showed marked distress upon attempting to swallow.

May 26th—Temperature 105.2 degrees at 2 a. m.; involuntary bowel movement. A little later rigidity of the right side was noticed. At about 5:30 she had a series of convulsions and died at 5:40 a. m.

The autopsy held at 11 a. m. of the 26th showed the meninges of the brain to be very markedly congested. The base of the left lung was consolidated and areas of consolidation were observed in the right lung. Five or six ounces of turbid reddish fluid were present in each pleural cavity. A large hemorrhagic area was found in the lower lobe of the left lung.

A microscopic examination of slides prepared from the hippocampus, showed presence of Negri bodies, typical in appearance though smaller than usual.

A rabbit inoculated subdurally on the 27th of May remained well until June 8th when paralysis began to develop. On June 10th paralysis being marked, the rabbit was chloroformed and the brain examined, disclosing presence of numerous Negri bodies, thus establishing the already determined clinical diagnosis of rabies.

The course of this case demonstrates that in a severe bite, close to the central nervous system, the Pasteur treatment may be ineffective, probably for two reasons. One is the fact that from the location of the bite, the incubation period may be so short that full immunity is not established before it is time for the symptoms to appear, and the other is that the amount of virus injected by the bite may exceed the minimum lethal dose, against which the treatment is capable of protecting.

The length of time the child lived after the onset of symptoms and also the comparative mildness of the symptoms would seem to confirm the opinion formed by the observation of previous similar cases, that the Pasteur treatment in those cases in which it is ineffective, modifies the course of the disease greatly, saving the patient much suffering.

Case No. 4. J. R., male, age 50 years, residing in the Mission. Was taken sick on July 15th, when he came home from work complaining of pains in his left arm and shoulder and in the

left side of his chest. The next day he went to work again but looked and felt sick. On the 17th Dr. J. W. Gunn, Jr., was called. The patient related that about six weeks before he had been given a puppy, three months old. A week later the dog became sick; nose dry; breathed heavily and drooled at the mouth. The next day it was noisy and whined a good deal. Its eyes were inflamed and it fell down at times while running about the house. On the first day of its sickness it bit J. R.'s wife superficially without drawing any blood. On the third day of its sickness it bit J. R. on the left thumb; a very slight wound. The next day the dog died, after the successful operation of some "worm medicine."

On the morning of the 19th the patient found that he could not swallow and began to complain of spasms in his abdomen whenever he tried to move about. His breathing became irregular and difficult. When shown fluids he tried to get away even to the extent of trying to get out of bed. His temperature was 99.6 degrees and pulse 106. A physical examination by Dr. Gunn was negative except for a slight heart murmur. About 5 p. m. the patient was seen by Drs. Brodrick, Kellogg, Gunn and Sawyer.

At this time great agitation and dyspnea was produced by any slight exertion and by attempting to drink. He was rational and upon request attempted to drink some milk. He succeeded in getting some down after great effort. He was unable to explain his apparent inability to drink and his fear. Knee jerk was slightly exaggerated. Pupils equal in size and slightly dilated; slight reflex to light. That night a male nurse was in attendance. During the night the patient did not sleep and was very talkative, at one time telling the nurse that he did not feel sick at all but felt excited as though he was slightly under the influence of alcohol.

Toward morning he began to get delirious, finally becoming so violent that chloroform was necessary at times to restrain him. He became so violently delirious and his convulsive seizures so frequent that he was kept under the influence of chloroform a large part of the time, on the 20th. On this day Drs. Brodrick, Sawyer, Kellogg and Gunn saw him again at about 4 p. m.

The anesthetic having been eased up a little the patient thrashed wildly about, salivation was marked, the throat filled with mucus; and the suffering appeared to be intense. He died at 5:20 p. m. of this day.

Autopsy. Body of a well developed, well nourished male about 50 years of age; post mortem lividity marked on extremities and dependent portions of the body; on the lower limbs are scattered deep purple raised areas about 3 mm. in diameter.

Appendix normal, no fluid in pelvic cavity; peritoneum normal, no fluid in pleural cavities. Pericardium normal, contains about 3 cc. of clear brownish fluid. Left ventricle filled with semi-fluid blood. Ventricle wall normal in thickness, somewhat paler than normal; valves normal. Areas of yellowish deposit throughout intima of aorta. Mitral valves and coronary arteries normal.

Lungs: Left lung crepitates throughout; abundant bloody fluid mixed with air exudes on incision, especially at base. Right lung free, few easily broken down adhesions at apex, otherwise same as left. Marked congestion of larger bronchi.

Spleen small, capsule wrinkled, normal color, pulp soft.

Kidneys, renal fat abundant; left kidney shows a few sub-capsular hemorrhages; cortex thin, capsule strips readily. Right kidney smaller than left, capsule strips, surface cyanotic.

Liver: Gallbladder larger than normal and distended with clear dark bile. Liver normal in size,

mottled appearance, edges sharp, cuts readily, nutmeg appearance. Surface dull yellowish brown with areas of lighter color.

Pelvic organs normal. Bladder contains large amount of turbid urine. Bladder wall smooth.

Brain: Vessels of pia intensely congested; no serous exudations, no adhesions.

Specimens of hippocampus major taken for bacteriological examination.

Stained smears made from the hippocampus did not disclose the presence of any Negri bodies, so rabbits and guinea pigs were inoculated with the material.

The result of these inoculations was positive for rabies, the animals dying of typical symptoms and Negri bodies being demonstrated in the brains.

In attempting to rid the city of rabies, the health authorities have been very much handicapped by the apathy of the general public and the determined objections of misguided individuals who believe they have the best interests of their pets at heart when they fight the enforcement of muzzling laws. An ordinance was adopted by the Board of Supervisors on March 20, 1912, requiring all dogs running at large to be muzzled, but exempting those being led by a rope or chain.

This ordinance was never enforced with any great vigor and expired on July 1, 1912, but was re-enacted on July 3, 1912, expiring on December 31, 1912, since which time no muzzling ordinance has been in effect.

The efforts of the city pound in destroying stray dogs and cats has undoubtedly been of greater value than any one measure, not even excepting the attempted education of dog owners by the distribution of circulars of information.

The number of animals destroyed at the pound during the first six months of 1912 was 4,440 dogs and 1,841 cats. During the second six months the dogs killed were 2,919 and the cats 2,293. For 1913 the figures of the eight months elapsed are dogs 3,528 and cats 3,537.

Hitherto in the discussion of rabies we have had two great epochs to refer to: the first was the discovery of Pasteur that immunity could be established during the incubation period by the inoculation of modified virus, prepared by drying the spinal cord of rabbits, dead of rabies, for varying periods, the longer the drying, the weaker the virus.

The second epoch was the discovery by Negri of characteristic bodies in the brain cells of rabid animals, which bodies are now universally accepted as the parasitic cause of the disease.

As the result of developments of the last few months, we are now able to add two more landmarks in the history of rabies: one is the announcement of Moon² of some successful experiments in the treatment of rabies by quinine, and the other is the announcement of Noguchi³ of a method of cultivating the negri bodies.

The preventive treatment of rabies as introduced by Pasteur has been modified very little in the passage of the years. The use of fourteen day cord or any cord older than eight days has been abandoned by most laboratories. Also most authorities are now using one and two day cords, whereas

Pasteur stopped at three days. Many different schemes of immunization have been tried, the most prominent of which are those of Högyes and Ferran. Högyes uses a dilution of fresh fixed virus in the belief that the drying process of the Pasteur method is in reality a dilution through the destruction of some of the organisms, and that his method of diluting the fixed virus gives a more accurate dosage. His results are good, more than 10,000 cases having been treated by his method.

Ferran's method is similar and relies upon a dilution of fresh fixed virus.

Other schemes have been tried, such as partial digestion of the fixed virus, attenuation by heat, mechanical disintegration, treatment with carbolic acid, glycerine, etc. On account of the more widespread and longer use of the Pasteur method, some form of that method is still the most popular. According to Remlinger⁴ it had been used previous to 1907 in 131,579 cases with 549 deaths occurring more than fifteen days after the completion of the treatment.

More recently Harris⁵ advocates the use of fixed virus, treated by freezing with carbon dioxide snow and drying in vacuo at -15 to -18 degree C. This method it is claimed has the advantage of both the Pasteur and Högyes methods in that it is as safe as the Pasteur and lends itself to a more accurate as well as a larger dosage as does the Högyes.

TREATMENT OF RABIES.

From time immemorial the treatment of rabies has been the subject of the wildest empiricism and superstition. Every drug has been recommended as well as weird and disgusting mixtures that would shame a practitioner of the Chinese school. Frederick the Great's law, requiring the operation for the removal of the "mad worm" from the tongues of all dogs and his emulsions of "mad worms in honey," are classic examples. In our own time the celebrated "mad stone," a calculus obtained from the intestinal canal of some of the domestic animals, has been held in high esteem by the laity. The reason for the persistence of these superstitions for any length of time is the fact that only one person out of six bitten by rabid animals develops the disease, even though untreated.

Excepting for the recent quinine treatment now to be described, we have no drugs that are of any avail whatever once the disease has developed in man, and it has been invariably fatal. Immune serum has been prepared from the blood of sheep immunized to rabies, and while it has some protecting power, it has never succeeded in saving a life. It has been used by Marie in the protective inoculation of bitten persons by mixing it with a larger dose than usual of fixed virus, thus hastening the development of immunity in cases presumed to have a short period of incubation.

Chloral and morphine may be used to quiet the spasms and to render the sufferer more comfortable, and chloroform should always be used for the paroxysms.

The quinine treatment before referred to promises to be a real specific. Reasoning from the sup-

position that the parasite of rabies is of protozoon nature, and from the success attained in the treatment by drugs of other infectious diseases of the same class, notably malaria, syphilis, sleeping sickness, etc., Moon of Chicago performed some experiments on dogs with quinine. The dogs were inoculated with an emulsion of rabid brain material by injecting with a needle a few drops in and around the ulnar nerve at the bend of the elbow, or the animal was anesthetized and the needle inserted below the eyeball and through the optic foramen, directly into the optic tract. When active symptoms of rabies developed, the animal was given a large dose of quinine sulphate in capsules stitched up in a piece of tough meat which would be swallowed whole. When the dog was unable to swallow the same was given hypodermically. The daily amount given was 1 to 1.6 grams in three doses to a dog weighing 6 or 7 kilo., an amount that would be equal to 12 to 18 grams daily for an average man. In each experiment a control dog, inoculated at the same time, was allowed to go without treatment. Three different experiments were made at different periods. Of the three dogs treated, two were alive and well at the time of writing, one about five months and the other a year after treatment. The third dog died of obscure causes two and one-half months after treatment. All of the control animals died with typical rabies.

Having observed in a recent newspaper dispatch an account of a case of human rabies in St. Louis treated by quinine, a letter was addressed to Dr. Harris, City Bacteriologist, who replied stating such to be the fact; that he had given the patient, clinically diagnosed as rabies, intravenous injections of 15 grain doses of bimuriate of quinine and urea, five doses in all being administered. The patient recovered.

This quinine treatment of rabies is so simple and so promising that a knowledge of it should be diffused by health officers throughout the country, so that no one suffering from this otherwise most certainly fatal disease will be denied the opportunity of a trial.

The cultivation of the Negri body by Noguchi is the final link in the chain of proof that rabies is a distinct infectious disease, and that the Negri body found in the brains of rabid animals is the specific parasitic cause of the disease. It disposes finally of doubt in the minds of a few ultra-conservatives on the nature of the Negri bodies, as all the postulates of Koch have been fulfilled to the letter. Noguchi's method was similar to one already described by him for the cultivation of the spirochete of relapsing fever.

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POINTS REGARDING TUBERCULOSIS OF INTEREST TO HEALTH OFFICERS.*

By ROBERT A. PEERS, M. D., Health Officer, Colfax.

When asked to present a paper before your body it seemed to me that it might be of some value to you if I should speak upon the subject as shown on the program, namely: Points Regarding Tuberculosis of Interest to Health Officers. Theoretically, that presented a subject very appropriate for the occasion. Practically, when I came to prepare my paper I asked myself, "What is there about tuberculosis of interest to the health officer that is not of interest to the public individually and collectively?" And indeed, anything intimately concerned with the control of the morbidity and mortality of the people, in order that we may attain the highest efficiency and achieve the most far-reaching results in matters pertaining to public health, must be made subject of very careful study by the layman as well as by the officially designated health officer. When that millennium arrives we may hope to conquer and wipe out all infectious diseases. In practice, however, the health officer, as the representative of the people, the one upon whose individual shoulders is thrust the collective burden of the community, is the one who does the work.

Tuberculosis is of interest to the health officer primarily as an infectious disease accountable for the mortality of one in seven of his community, of his family and of his friends. More than that it infects probably five out of the remaining six-sevenths at some period during the lifetime of the individuals comprising that number. It is the duty of the health officer to prevent the occurrence of disease or, when it occurs, to limit its spread. The reason for his existence is the prevention of morbidity and mortality. Granted that this is the reason for his appointment, it seems reasonable to suppose that those diseases causing the greatest morbidity and the greatest mortality, those diseases that work ceaselessly and relentlessly—claiming their victims with regularity and precision, would receive the greatest amount of attention and demand the greatest efforts at prevention. Is it so? Theoretically, fine; practically, it works the other way. A case of smallpox occurs—there is quarantine or isolation, vaccination of contacts, reports to the State Board of Health, exclusion from school of unvaccinated children. A few cases of diphtheria or scarlet fever make their appearance—there is quarantine or isolation, search for carriers, cultures taken from noses and throats, schools, theaters and other such places closed to children and even to adults. Money is no object, inconvenience is not considered, the demand for a clean bill of health is paramount. A case of typhoid is discovered and a diligent effort is made to discover the source of contagion and by destruction of excreta and exclusion of flies to prevent the spread of the disease. What happens when a case of tuberculosis is found? Nothing. The health of-

* Read before the Fifth Annual Conference of State, County, and Municipal Health Officials, Venice, October 6 to 11, 1913.

ficer most likely never even hears of it. If he does, what does he do? Nothing—Does he look for other cases in the family? Does he give instruction about the disposal of sputum? Does he tell each patient to hold a cloth in front of his mouth when he coughs? Does he look for the source of contagion—for a tuberculosis carrier or active cases of tuberculosis? Does he do any or all of these things he knows will help to limit the spread of tuberculosis? No—except on rare occasions. Perhaps it is because tuberculosis is of very little moment compared with the other diseases named. It cannot be. In 1911 smallpox caused in California the deaths of nine people, scarlet fever 81 people, diphtheria and croup 167 or 0.5% of the mortality, typhoid 444 people or 1.3%, tuberculosis 5114 people or 15%. If a business man ran his business in that manner, spending all his time looking after the little leaks and overlooking a leak that sooner or later swallowed up one-seventh of his principal and one-seventh of his profit he would soon be bankrupt and were it not for our great natural resistance we would soon all be bankrupt in health. There must be reasons then for this, to me, marvelous indifference. I think these reasons are—first, lack of the spectacular; second, the recent complete change in our ideas about tuberculosis.

There is nothing spectacular about tuberculosis either in its inception, its course, or its victory. It is not ushered in by a chill, a rapid rise of temperature and the occurrence of a scarlet or a pustular rash, it does not sweep through a community in a few weeks leaving a trail of death nor is its victory signalized by the sudden cutting down of its victim in the midst of health. Rather is its onset insidious, the patient unable to tell when he first began to have the tired feeling and to experience the lack of ambition which constitutes the first evidences of the deleterious effect upon the body of the absorption of the tuberculosis proteid. Rather is its march one of stealth, taking here one and there one, but so quietly and unobtrusively that only by the reading of statistics can one appreciate its deadly power. Even in its victory there is nothing of the spectacular, the victim having for so long been a sufferer that his death arouses but little comment. It is the lack of the unusual and the occurrence of the commonplace that fails to attract attention or blunts the sensibilities of the public.

Again it is but a generation since our entire conception of the etiology of tuberculosis has undergone a complete change. From our understanding of tuberculosis as a disease that was hereditary, non-preventable, and incurable—in the course of a few years we have come to look upon it not as hereditary but as infectious, not a non-preventable affliction but a preventable disgrace, not an incurable but one of the most curable of diseases. I say our conception of the disease has been changed; I should say the conception of the thinking and reading portion of the people, which constitutes but a small percentage. The large percentage who let others do their thinking and

reading are only now beginning to grasp the essentials. But the awakening has come and the results will soon follow in the way of aroused interest, demands of more effectual campaigns with the appropriations necessary to wage the fight. Heretofore we have been handicapped by following many theories that have turned out to be merely half-truths and the over-enthusiasm of the few has in some instances turned to a feeling of helplessness of defeat.

To conquer a disease it is first necessary to know the cause and the manner in which it is spread. The cause we know—the tubercle bacillus—a minute vegetable organism. The manner of its spread we can more than surmise. To those who have most to do with tuberculosis it is becoming more and more apparent that the principal cause of the infection of man is man. I do not wish to unduly underestimate the spread of tuberculosis by the milk of tuberculous cows but I think that infection from this source is of minor importance when compared with the infection of human by human. Tuberculosis is a much more prevalent disease than is dreamed by the average citizen or even by the average physician. Show me a case of tuberculosis and I will find for you evidence of two, three, four, or five cases in the same family, cases latent, cases active, and cases cured. Just as you have your diphtheria and typhoid carriers just, so surely, I believe, do you have your tuberculosis carriers, individuals suffering from tuberculosis whose resisting power has not yet broken down or whose body has built up an immunity that protects it from the ravages of the tubercle bacillus and either of these two types can and does spread the disease. Such individuals have their bad spells and are treated at various times for chronic bronchitis, malaria, atypical typhoid, pleurisy, atypical pneumonia, catarrh, stomach trouble, throat troubles, asthma, liver trouble and a score of other diseases. A proper diagnosis with proper instructions faithfully carried out would eliminate these individuals as infective agents. I believe it is the contact with these individuals, principally in their own homes, that is responsible for the spread of a large percentage of tuberculosis. We have been treating only the terminal stages of a protean disease that by its many disguises and because of our past ignorance has deceived the medical profession and continues to flourish in spite of our efforts to stop the spread. And before we can stop the spread of tuberculosis we must again unlearn some of the fallacies that have been and are yet accepted as truths by the public. We must have as health officers men who are as able to detect and diagnose cases of tuberculosis, atypical cases, as they are to-day to detect carriers of diphtheria. We must make the health officer, the physician and the layman appreciate the significance of a cough, when prolonged or when associated with fever, sweats, loss of weight, a tired feeling and malaise. We must learn that spitting into the gutter by the tuberculous, or even on the sidewalk or in cars, providing the sputum is reached by sunlight and fresh

both a fit and healthful employment for the boy or girl of low vitality who promises to become tubercular. Curiosity and love of color are often characteristics of a low grade of intelligence, and both can be advantageously used in guiding such in the cultivation of plants and small animals.

In the judgment of many, too much attention has been given to helping and prodding and coaxing the defectives, and not enough to properly directing the bright ones. It is not the slowcoach who is the menace to the commonwealth. It is the one who is educated to the point where he is ashamed of work, and has not been guided into any suitable occupation.

It is often the very bright pupil who has the idle time that leads into mischief, and whose easy time in school leaves him unfitted for the plodding which is a part of every vocation.

In New Orleans the schools have taken up the study of the exceptional child, and through his parents and without attracting his attention to the fact that he is being studied, trying to ascertain why he is strong, healthy and happy, and so create an ideal for which others will strive.

As this child is the *really normal* child, these studies will show the results and comparative value of heredity and environment, and the time and effort lost on dullards can be spent on these normal pupils.

MODIFICATIONS IN ADMINISTRATIVE MEASURES NECESSITATED BY THE CARRIER PROBLEM.*

By F. W. BROWNING, M. D., Health Officer, Hayward.

The "carrier" problem confronts us very seriously in California for the reason that as yet the State Board of Health has not promulgated any regulations for the guidance of the health officer. Criticism, however, is not called for because no practical solution of the problem has been found. It is brought before this body of health officers at this time in the hope that practical recommendations, even though of a temporary nature, may be offered for the consideration of the State Board of Health.

Rosenau makes the trite remark that "the relief of bacillus carriers is one of the rewardful problems in preventive medicine," whilst Albert of Iowa City, after reading a very excellent paper on the problem of the diphtheria "carrier" at the last meeting of the American Medical Association last June, which was freely discussed by eminent men, closes the discussion thus: "The number of methods that have been discussed emphasizes one of the conclusions that we made, viz: that no one method has as yet proved satisfactory for the proper treatment of the carrier condition."

Let us briefly consider the situation in California at this time in so far as it concerns *diphtheria*.

The ruling of the State Board of Health is that "release from quarantine for diphtheria must be based upon the determination of two consecutive negative cultures from the nose and throat, these

two cultures to be taken on separate days" (see Order dated January 8, 1910).

I also have a ruling from the President of the State Board of Health as follows: "All children in whose throats the Loeffler bacilli are found should be isolated." And again from the same authority: "Just so long as the Loeffler bacilli are found in a child's throat, that child should be quarantined." These rulings only deal with clinical cases of diphtheria and post-diphtheria carriers, whilst the vastly more numerous class of persistent "carriers" are allowed to roam at will, and because they are not in any way restricted they are unquestionably the more frequent source for the dissemination of diphtheria.

In some countries, Austria to wit, bacillus carriers are to be regarded exactly like persons ill of the contagious diseases, or like suspects. In Toronto, Canada, all diphtheria carriers are isolated and thus prevented from coming in contact with other children.

According to an investigation made by the Research Laboratory of Johns Hopkins Hospital there was an average of 3.61% of carriers among the 80,000 school children of Baltimore, whilst 3.48% was the average number of carriers among the general population of the city, which, with an estimated population of 600,000 would give 20,880 carriers in the city. This works out, according to the report, with an average of 20 carriers to every case of diphtheria.

Taking these figures as a standard the actual conditions in California are that the *one* case of diphtheria is quarantined, perhaps for six months or more (an actual experience in my own practice), and the *twenty* carriers are allowed to roam at large, each one a focus of more or less severity for the further dissemination of the disease. Yet according to the above standard it is not practical to isolate every carrier, for public opinion would not consent. It is, therefore, very essential that some reasonable plan should be devised, even if it is only a temporary one, to meet the present necessities.

Ledingham, in discussing the supervision of diphtheria carriers, says: "The difficulty arises in the case of carriers who have for long periods yielded cultures regarded as positive. In such cases it is advisable to prepare a pure culture, in order to make certain that the bacillus is properly classed as *B. diphtheria* and not one of the rarer forms of diphtheria which closely resemble *B. diphtheria* morphologically. If the bacillus after isolation proves culturally and biochemically indistinguishable from *B. diphtheria*, but completely nonvirulent, the question of the isolation of the carrier arises. If there is good reason for believing that only nonvirulent *B. diphtheria* are present, i. e., if the culture appears to contain only one form of *B. diphtheria*, then it may sometimes be necessary to relax the isolation in certain cases, but under no circumstances should such a child or person be allowed to return to school or to undertake the care of small children."

Would it not be reasonable for the State Board

* Read before the Fifth Annual Conference of State, County, and Municipal Health Officials, Venice, October 6 to 11, 1913.

of Health to promulgate a temporary ruling in cases of long standing diphtheria carriers when cultures from the nose and throat, as demonstrated in the State Hygienic Laboratory, show a non-virulent type of bacillus, that isolation may be modified? The terms of the modification may be set by the state board or delegated to the secretary or the Director of the State Laboratory.

Last winter an effort was made in Hayward to follow the rulings of the state board in continuing quarantine until two consecutive negative cultures were obtained in all post-diphtheritic carriers and contacts. The result was that out of 14 families in which diphtheria developed absolute quarantine was maintained as follows:

Family of 4 persons was quarantined for 43 days.

Family of 8 persons was quarantined for 50 days.

Family of 3 persons was quarantined for 171 days and still positive.

Family of 3 persons was quarantined for 88 days.

Family of 10 persons was quarantined for 143 days.

Family of 9 persons was quarantined for 40 days.

Family of 4 persons was quarantined for 33 days.

Total, 41 persons quarantined for 568 days.

Thus one-half of the 14 families were quarantined on an average for 81 days each or nearly three months per family, and in every instance they were among the laboring classes.

It is not to be wondered at that the public chafe under such stringent measures, especially when it is known that other carriers whom the public have been led to believe are just as dangerous, are allowed perfect freedom.

The practical outcome of this present method is that the public hesitate to call in medical attention, and in consequence diphtheria will run rife before the health authorities are cognizant of its presence.

The importance of the carrier problem is illustrated by the results of an investigation carried on in Hayward in 1908. A brief report of this work is appended.

REPORT ON DIPHTHERIA CARRIERS IN HAYWARD GRAMMAR SCHOOL.

Owing to the presence of several cases of diphtheria distributed indiscriminately throughout the entire school district in the early part of 1908, permission was obtained from the school trustees to test out the entire school of 690 pupils. With the assistance of the State Hygienic Laboratory, which did the bacteriological work, swabs were taken from the nose and throat of half the scholars on February 10th and the other half on February 13th. The report from the laboratory showed 93 of the children as "carriers." These were at once sent home, together with their respective brothers and sisters, and were not allowed to return to school until they all showed two negative (consecutive) reports from the State Laboratory. During the next two months swabs were taken from all these excluded children twice weekly and 33 more of these children developed as carriers, making a total of 126 "carriers." Note that the extra 33 were among the brothers and sisters of the original

93 "carriers." The scholars who had shown negative results at the first examination were allowed to continue at school and were not again swabbed. In all there were 163 pupils excluded from school, of whom 126 were "carriers" at one time or another during the two months from February 10 to April 10. It is interesting to note that the 126 "carriers" represented 83 different families, distributed fairly evenly throughout the entire school district, no section being more affected than another. The percentage of nationalities did not vary from the same percentage of nationalities in school attendance, viz: about one-third American, one-third Portuguese and one-third Germans, Danes, etc. The distribution of the "carriers" in the school grades was of about the same ratio, though the Eighth Grade had the highest percentage, about 50% of the class being absent at one time. It is worthy of more than passing note to mention that during this period there were seven cases of diphtheria, six were pupils who had given negative results at the original swabbing and were therefore attending school at the time they were taken sick. The other case was that of a mother of a scholar who was a "carrier." Of the seven cases three died, medical attention not having been sought until the children were practically moribund.

With the exclusion of the children from school no special treatment was ordered, nor was any special care given so far as can be ascertained, except in one or two cases.

The following table shows the percentage of "carriers" persisting during the two months:

Total number of children examined—690.

Feb. 10-13.....	126	"carriers"....	about 18	%
Feb. 18.....	79	"	11.5	%
Feb. 29.....	62	"	9	%
Mch. 10.....	45	"	6.5	%
Mch. 17.....	33	"	5	%
Mch. 23.....	23	"	3.25	%
Mch. 31.....	15	"	2.25	%
April 10.....	12	"	1.75	%

On April 10th the school trustees ordered all children re-admitted to school. No further diphtheria developed until July—during vacation time of school, when three children in one family who had all been "carriers" and consequently excluded from school during the investigation and were among those ordered to be re-admitted, became victims.

SUGGESTED IMPROVEMENTS IN OUR METHODS OF CONTROLLING THE COMMON CONTAGIOUS DISEASES.*

By JACKSON TEMPLE, M. D., Health Officer, Santa Rosa.

In presenting this paper to you I will be guilty of much use of the first personal pronoun. When I say I, I mean I for I do not expect any other than myself to be held responsible for the views expressed herein. I do not wish you, however, to consider them original. As a matter of

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fact many of my suggestions were presented to a recent legislature in a bill but met defeat at the hands of a body educated, apparently, to oppose everything medical.

There should be improvement in our present methods of controlling contagious diseases for the following reasons:

The first reason is that there is no uniform method in our administration of the laws and rules relating to the control of these diseases. I doubt if there ever will be, at least as long as our health boards and health officers are appointed as they now are. There are doubtless many brilliant, conscientious, efficient health boards and officers in this state. No matter how brilliant these individuals are, their efficiency is nullified or reduced by the systems under which they operate. This is not to be attributed to the apparent or real lack of efficiency of any one or more individuals. As a matter of fact there is not sufficient cohesion in our public health machine. As a city health officer my acts and my methods are not the same as those of the county health officer by whose territory I am surrounded and my work and methods are and only can be remotely influenced by the State Board of Health.

To be efficient our system should be more coherent and our authority descend directly from the State Board of Health. The State Board should be paramount, next in authority the county health officer, and then the health department of the city and town.

All health reports for the entire county should be made to the county health office maintained at the county seat and transmitted through that office to the State Board of Health. In this way I would be continually informed of what is going on immediately about my jurisdiction.

As a simple illustration, adjacent to and continuous with our city are the residences of a large population compared with that within the city limits. This district is under the supervision of the county health officer, whose methods do not coincide with mine. In diphtheria I quarantine the entire family and allow none to attend school from that family until disinfected, immunized with serum, and free from the presence of the Krebs-Loeffler bacillus in the throat. The patient is isolated until no more germs are demonstrated in the throat, on three consecutive days. The first culture is not taken until twenty-one days after the case is reported to my office. The county health officer makes no cultures and requires none, allows the attending physician to place a quarantine upon the house, and asks only to be informed of the time when the visiting physician thinks the patient is well. In my estimation this amounts to no quarantine at all.

I require that all physicians in my jurisdiction shall report cases as specified in the quarantine law of 1911. I know that many cases are not reported, and as long as man is man and is subject to the same influences and persuasions as now control him, many cases will continue to go unreported. However that may be, it is only

abetted by our lax system of health authority and methods.

In the matter of reporting cases there is no uniform system. My office provides blanks to the doctors upon which to report contagious and communicable diseases. Doctors are also permitted to make their reports by telephone. Physicians reporting contagious or communicable diseases, in addition to giving name, residence and source of infection, should also give the place of employment or school attended by the members of the family. He should also report any exposures known to him. In this way a record would be kept at the central office in the county seat. The health officer whose territory is exposed by the place of employment or school attendance should be notified of such exposure. He would then be in a position to take whatever measures he might deem necessary in the matter.

As an illustration, many children at Cotati attend school at Petaluma eight miles distant. In case of diphtheria in a family at Cotati having a child attending school at Petaluma the county health officer is not informed of that fact. He cannot inform the school or health authorities at Petaluma, under the system practiced in Sonoma county. Of course, he can and should know and if his office were responsible for the whole county in and outside city and town limits I believe he would watch and know.

Again, about two months ago, four patients suffering from a very virulent typhoid infection were brought into my jurisdiction from that of the county health officer. I was notified by the attending physician of two of them and discovered the other two for myself. All four had been living together. I had no word from the county health officer but I notified his office of the cases and whence they had come. Nothing, as far as I know, was done by the county office. Interested parties employed me to find the source of infection and I did so and reported same to the county health office. However, the source of infection was eradicated under my direction and without the assistance of the county office. This matter should have been handled first by the county office and my orders or instruction should have come from that office.

My office communicates with the police office, which places a placard on the house informing the dwellers therein of the quarantine and their duties in regard thereto. After a specified time the quarantine is removed and the place is disinfected by the residents under the supervision of myself or deputy, or the city does the disinfecting itself. In the matter of disinfection there is a great amount of difference of opinion and practice. The charter and ordinances of my city make no provision for disinfection except that it shall be performed. Usually the work is required to be done at the expense of the householder and under the supervision of the health officer or deputy. The board of health or health officer may elect to do the work at the expense of the city. In my opinion disinfection should always be done by some one

regularly employed by the city and at public expense. This practice should be uniform in all communities.

I am particularly interested to know what is the general practice in regard to the time each case is kept isolated. Recently I went through all the literature at my disposal trying to compile a consensus of opinion in the matter of incubation, invasion and time of contagion, in contagious diseases. I was surprised at the amount of literature on contagious diseases, in which so little attention had been paid to these phases of the subject. I expected each author would express his opinion on each of these matters seriatim. Most authorities had left out the period of invasion, few had missed a consideration of the period of incubation, but none had expressed his opinion as to the time of contagiousness of all the diseases considered. It is not my province nor my intention to try to inform you on these subjects, but I assume we all have fairly well fixed in our minds how we should dispose of the matter of quarantine and isolation in each case. Certain it is that we should get together on these matters and the length and character of quarantine in each case. This matter I understand will be treated and probably agreed upon in a report of a committee previously appointed to consider it. It was chiefly the consideration of this matter that induced the council of my city to send me here at this time.

You will note that I have not said that there are many health officers who do not know how to conduct their offices or do not conduct them as they should, but that there is no uniform method of reporting and caring for the quarantine of contagious and communicable diseases. Lack of uniform method causes confusion and in confusion there can be no efficiency. Lack of proper and efficient methods in some offices can be attributed to political influences. One man in a near-by country town (the health officer of that town) recently said to me: "If I attempted to enforce the provisions of the state quarantine laws I would be driven from the house of my patients and the other doctors of my jurisdiction would refuse to report any contagious cases to me." More shame to him and his colleagues. If members of the medical profession fear to enforce those measures which according to their standards are for the benefit of the community, how can we hope for the co-operation of the public? How little faith must such men have in the precepts of the profession they exploit. This in itself strongly urges greater cohesion in health office administration.

It is probable that this particular health officer is not alone in this viewpoint. If such is the case (and it is) then it is that the general public is not ready to accept our views in the matter of the control of contagious diseases. The only remedy that I can see for this is the education of the public to better health standards. To accomplish this education nothing can or does excel the enforcement of the health laws and rules themselves. With my limited experience I can see that this is a fact. When I assumed the office I now occupy

nothing or nearly nothing had been done to enforce health laws or rules except what was specifically demanded by the Secretary of the State Board of Health. Now regulations that were then dead for want of use, are enforced, with the assistance and sometimes the insistence of those who used to be struck with indignation at the simplest and smallest request of the health department. Further than this, we can educate our public through the schools and public demonstrations by means of popular lectures. The public receives with avidity all such instruction that it can get in matters pertaining to farm plants and animals. It would receive with equal avidity the lectures and demonstrations carried on by the board of health. It does so receive them when they are provided. We allow laws to be passed for the control of disease and the practice of the healing art, which are fostered by those who think differently than we do. We say of the antivaccinationist and the "Christian Scientist" that they have accomplished the passage of legislation favorable to them, because of the momentary influence over individual legislators when they are passing laws at Sacramento. I tell you such is not the case. The actual fact is that they educate a considerable portion of the population to their way of thinking. They do actually receive favorable legislation because many of the people are with them. The law entitled "An act to encourage and provide for vaccination, etc.," and which should be entitled "An act to discourage and provide against vaccination, etc.," was passed not because the antivaccinationist and the members of every other sect and cult and ism opposed to all health regulation not their own and especially that with medical supervision, gained control of our legislators, but because the will of all the people was not opposed to them. It is true we have to put up with political pandering to certain constituencies but as a matter of fact the greater representation was made against our point of view. When the bulk of the people are educated to proper health regulations the politician will turn his eyes and ears the other way. I am not willing to acknowledge my professional beliefs so flimsy and so shallow as not to be able to withstand any and all criticisms and misinformations. What is true can be proved to be true and when all the people are convinced of what is best, that and only that is what they will have.

I advocate as much public instruction for the promotion of human conservation as is now accorded commercial conservation. What is right in health regulations is provable and will survive. What we want and need are uniform instructions and regulations to follow, then those who are brilliant and efficient will still be efficient and those who are naturally inattentive and inefficient will be less so or will be replaced with those who are efficient.

To sum up. I suggest a more coherent system of public health administration. The central supreme power should be vested in the State Board of Health as now. Next in order of authority should be the County Board of Health with an

organized clerical and laboratory force at the county seat. Last should be the City or Town Board of Health. Methods of quarantine, isolation and disinfection should be the same in all communities. Disinfection should always be done by trained, competent experts paid by public funds and disinfection after contagious or infectious diseases that have been quarantined should never be left to or permitted to be done by the householder. This procedure should apply to all localities. For the accomplishment of the best results from this system I advocate energetic and efficient public instruction. When all the people understand what is best that is what they *will* have.

Finally, for the benefit of the new more coherent machine of public health administration, I recommend a Bureau of Efficiency to be maintained by the State Board of Health. This department should employ public health experts to visit, confer with, criticize and help the heads of the various units. They should make periodic visits to all health officers as well as special visits for special occasions. With the addition of this department we shall promote not only more coherence but more efficiency in our public health administration.

RECENT LEGISLATION ON COMMUNICABLE DISEASES IN THE UNITED STATES.*

By JOHN N. FORCE, M. D., Berkeley, Asst. Prof. of Epidemiology, University of California.

It is proposed in this paper to consider some recently published regulations and recommendations in the control of a group of communicable diseases which for purposes of administration have been designated as "Class A." These diseases are smallpox, scarlet fever, diphtheria and typhoid fever. In this connection a study has been made of all legislative acts and State Board of Health regulations, bearing on communicable disease control, which have been issued since June 30, 1911.

General Procedure. The general procedure in communicable disease control may be classed under the following heads: notification, investigation, quarantine, isolation, removal, release and disinfection.

Notification. At the eleventh annual conference of state and territorial health authorities with the United States Public Health Service, the committee on morbidity reports presented a model state law for morbidity reports, which was adopted with the suggestion its provisions be made a part of state board of health regulations until legislative enactment. The text of the model law appears in the Public Health Reports, Vol. XXVIII, No. 26, p. 1323, June 27, 1913.

Investigation. The responsibility of the local health authority for conducting a proper investigation of each case of communicable disease cannot be overestimated. By this means carriers and missed cases may be discovered and placed under restraining rules.

Quarantine. Recent state sanitary codes are recognizing two types of quarantine.

1. Absolute quarantine, which provides for the isolation of the patient and the complete segregation of the social unit of which he is a member.

2. Modified quarantine, which provides for the isolation of the patient, but allows exit and entrance to members of the social unit depending on immunity to the disease, conditions of occupation or age.

Removal. While the removal of the patient to a contagious disease hospital is recommended in the case of a person whose isolation within the social unit is impracticable or would work extreme hardship, either to himself or the social unit involved, it is not held that removal to a hospital has had any effect in lowering the percentage of incidence.

Isolation. Isolation of the patient has its chief value at the beginning of an epidemic, where the cases are few and the contacts can be controlled. Under these conditions, isolation may prevent the formation of carriers. When, however, the disease has become endemic and there are numerous carriers and missed cases, isolation has no marked effect in controlling the spread of the infection. The conditions of isolation should be carefully supervised by the local health authority, and absolute quarantine should be substituted if members of the social unit violate the conditions. This latter situation should be avoided if possible, since it may result in the formation of more carriers through the enforced segregation of the members of a social unit within narrow confines.

Release. Procedure in release is of course conditional on the amount of our exact knowledge of the modes of transmission of the disease in question. Evidence is slowly accumulating that the prodromal stage of many of the contagious diseases is in reality the most infectious. This will undoubtedly tend to shorten the period of isolation to coincide with the period of infectivity.

Disinfection. The need for an efficient destruction of infectious material *during the course of the disease* should be impressed on all persons having any relations to the patient. Terminal fumigation, with its false impression of future protection, should never be substituted for the routine disinfection or destruction of infectious material.

In this connection is quoted the following paragraph from the 1912 Report of the Committee on the Study and Prevention of Communicable Diseases, of the American Public Health Association: "Your committee, however, is of the opinion that terminal room disinfection as at present practiced by the average Board of Health, has little effect in controlling the spread of infection, and that it appears, in so far as figures are available, that the percentage of return cases is practically the same in those communities where disinfection is compulsory as in those where it is not required."

Special Procedure. Under this heading will be considered smallpox, scarlet fever, diphtheria and typhoid fever.

Smallpox. There is a tendency in the more recent state regulations to recognize vaccination as

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the only efficient measure in the control of smallpox. We find, for example, in the state code of Florida that quarantine for smallpox has been abandoned, and no restrictions are placed on members of the social unit other than the patient. The patient must be isolated, and vaccination of contacts is recommended, but is entirely voluntary. Terminal disinfection is performed only when members of the social unit have refused to be vaccinated. In Minnesota, on the other hand, where no quarantine for smallpox is recognized, contacts must be vaccinated or placed under the same conditions of isolation as the patient. Both of these states put up warning cards as a matter of information for persons coming to the house. The New York Public Health Manual states: "While everything except vaccination is of minor importance, either to protect people from smallpox or to control an outbreak, patients should be rigidly quarantined throughout entire disease, and thorough disinfection of patients and premises done after recovery." Unless the patient is removed, the absolute quarantine is maintained for three weeks, or until the skin is clear. Contacts must be vaccinated and kept under observation. Iowa prescribes a modified quarantine which releases members of the social unit who have been vaccinated during the preceding three years. The case is isolated until after complete desquamation, and fumigation is prescribed. Vaccination may be either by scarification of the skin or by internal administration. In this connection I should like to state that I recently produced primary vaccinia in two persons who were armed, but not protected, with certificates of immunity based on internal vaccination.

Scarlet Fever. The present question involved in scarlet fever is whether release should be based on a fixed time, on the completion of desquamation, or the condition of the naso-pharyngeal membranes and the absence of suppurative otitis media. Minnesota covers all the points by requiring a three weeks' minimum quarantine period in addition to completion of desquamation and normal condition of the throat and nose. The New York Manual says: "The duration of the quarantine cannot be given, as it is impossible to say positively when the infectivity of all cases ceases. While the desquamating scales are not necessarily contagious, it is a good rule to isolate the patient until the skin is clear. It is most important to isolate until the mucous surfaces are clear." Absolute quarantine is employed, but removal is advocated. The following paragraphs are from the Report of the Committee on Communicable Diseases for 1912: "Evidence is accumulating that the infectious principle in scarlet fever resides in the naso-pharyngeal secretions and not in the scales of desquamation. In those hospitals in England and the United States where it is customary to discharge patients when the nose and throat appear normal regardless of desquamation, a marked reduction in the length of detention is shown without any appreciable increase in the number of return cases. A certain number of cases seem to show a return of infectivity some time after release, this return being

apparently due to a coryza. Doctor Morton, superintendent of the Lightburn Hospital, Lanarkshire, England, speaking of return cases says: 'We are more and more being forced to the opinion that scarlet fever is only infectious by means of fresh discharges, usually transferred by direct transmission from one person to another, or if not directly, then by something which has been inoculated with the discharge not more than a few hours previously.'"

Diphtheria. The release from quarantine is in general based on the securing of two negative cultures from the patient, which must be taken from one to three days apart. There are special rules for this procedure varying with the several states. Minnesota releases at the end of six weeks, even if the two negative cultures have not been obtained. In New York twenty-one days of quarantine are required, and if two negative cultures can not be obtained at the end of that time, a special investigation is conducted by the state health authority. In Washington the last culture of the two must be taken by the local health authority, and a negative culture must be obtained from all contacts. Iowa prescribes that the cultures shall be from both nose and throat, shall not be taken until five days after the disappearance of all inflammation of the nose and throat, shall be examined by the director of the state bacteriological laboratory or a bacteriologist designated by him, and shall not be taken within twenty-four hours of each other.

Typhoid Fever. Several of the states prescribe terminal disinfection, fly screening and inspection of surroundings of all cases of typhoid. There is no reference in any of the codes considered to the examination of stools before release in order to recognize a possible carrier, and limit his occupations accordingly. The Committee on Communicable Diseases in both the 1911 and 1912 reports laid emphasis on the value of the anti-typhoid inoculation.

Score Card for Health Departments. Preliminary announcement is made of a score card for health departments which is now being prepared. It is hoped by the use of this card to secure definite ratings of the various health departments throughout the state, which will be a basis for constructive criticism.

The California Sanitary Code. The State Board of Health is engaged in the preparation of a sanitary code for California. The first portion of this code to be issued will deal with the control of communicable diseases. It will be supplied to health officers in the form of circulars which will eventually be assembled in book form with a suitable index. Under each subject will be considered:

1. Rules bearing on the subject issued by the State Board of Health.
2. Notes explanatory of these rules which will be inserted in the body of the rules, but printed in a smaller type.
3. Directions for any special procedure not covered by the rules or explanations.

4. The Acts of Legislature bearing on the subject.

In connection with this report, a circular dealing with the very timely topic of rabies is presented.

It must be remembered that the preparation of these circulars involves a certain amount of labor, consisting principally of reading the regulations and procedure of other states and of foreign countries. In the case of smallpox certain experimental work was carried out, as was the case with poliomyelitis, and it is hoped to make practical application of the findings in the circulars. In consideration of these facts the board requests a certain amount of patience on the part of the health authorities.

REGULATIONS OF THE CALIFORNIA STATE BOARD OF HEALTH

for the Enforcement of

AN ACT TO PREVENT THE INTRODUCTION AND SPREAD OF RABIES.*

(Chapter 369, Statutes of 1913.)

Rule 1. Any person owning, or having the charge of, or observing any animal which he shall know or suspect to be affected with rabies shall immediately confine such animal, if this can be brought about with reasonable safety, and shall at once give notice to the local health authority of the whereabouts of such animal and the reasons for believing it to be affected with rabies.

Note: The diagnosis of rabies may be difficult and may require the judgment of an experienced physician or veterinarian, but any of the following symptoms should be considered as sufficient evidence for suspecting rabies and reporting the animal, under the provisions of this rule, for further investigation.

1. Sudden change in disposition.
2. Unusual nervousness or irritability.
3. Tendency to leave home.
4. Change in voice.
5. Refusal to eat.
6. Tendency to snap or bite without provocation.
7. Weakness or paralysis of the legs or lower jaw.

Rule 2. Every local health authority upon receiving information of the existence of rabies must immediately make an investigation and within twenty-four hours thereafter must report fully in writing to the State Board of Health, except as provided in Rule 4.

Rule 3. Animals confined under suspicion of having rabies shall be kept under proper care and observation and shall not be killed or released until ten days shall have elapsed dating from the beginning of the confinement. If the animal dies or has been killed under suspicion of having rabies, its head shall be removed and shall be sent to the state or municipal laboratory for examination.

Note: See appended directions for sending specimens to the laboratory.

Rule 4. When the State Board of Health shall declare a quarantine against certain designated animals within a specified area, on account of the existence of rabies, all such animals within such

area shall be kept in strict confinement upon the private premises of the owners under restraint by leash or closed cage or paddock. In areas already under quarantine, or special regulations substituted for quarantine (Chapter 369, Sec. 2, Statutes of 1913), the provisions of Rule 3 may be abridged or modified at the discretion of the local health authority and the reports required in Rule 2 may be made monthly, unless the State Board of Health shall specify to the contrary.

Note: Specified areas, districts, subdivisions, and similar terms in these rules, do not necessarily follow city or county lines, but refer to areas whose boundaries are determined by the extent of the infection and the territory endangered thereby. By declaration of quarantine is meant the formal notice that a given area is placed under quarantine for rabies by the state board of health. This notice will be sent by letter or telegraph to the local health authority, who will proceed as an agent of the state board of health to enforce the provisions of the law.

Rule 5. If the State Board of Health, after the establishment of quarantine, substitutes for Rule 4 such regulations as may be deemed adequate (Sec. 2, Chapter 369, Statutes of 1913), failure to enforce such substitute regulations strictly will be followed by a return to the enforcement of the full regulations of quarantine (See Rule 4) or such changes in the regulations as may be deemed advisable by the State Board of Health.

Note: Regulations, substituted for quarantine, will be based on the special conditions in the area under consideration, and will be determined by the state board of health in conference with the local health authority.

The following illustrates measures which may be incorporated, singly or in combination, in regulations adopted for enforcement under this rule:

1. Restriction of dogs to enclosed premises of owner, and appearance on street under leash, provided they are not taken upon public conveyances.
2. Permission for dogs to run at large if wearing a muzzle of approved type.
3. Exemption of dogs from muzzling requirement while engaged in hunting or herding under supervision.
4. Extension of this exemption to all dogs in a specified subdivision of the area under regulation, provided that these dogs are not taken out of this subdivision.

Rule 6. Quarantine and regulations substituted for quarantine together must cover a continuous period of six months before the State Board of Health will consider release from quarantine or from substituted regulations.

Note: The period of six months has been designated because this length of time covers the incubation period for practically all cases of rabies.

The state board of health will not make a quarantine order when it appears on investigation that the infection is strictly limited to the animal exhibiting the disease, and all contacts are under control.

Rule 7. When an area has been declared by the State Board of Health to be under quarantine, or regulations substituted for quarantine, on account of rabies, no dog shall be taken, or allowed to go, into or out of such area, except upon presentation of a written permit from the Secretary of the State Board of Health, or a representative authorized by the State Board of Health to issue

* Read before the Fifth Annual Conference of State, County, and Municipal Health Officials, Venice, October 6 to 11, 1913.

permits under certain conditions prescribed by the Board.

Note: The permit specified in Rule 7 will ordinarily be issued for animals from uninfected areas and for animals brought in for temporary exhibition purposes in theaters, bench shows, etc., provided these latter animals are kept segregated from other animals in the area.

Rule 8. It is the duty of all peace officers and local health authorities to enforce the requirements of the quarantine or regulations declared by the State Board of Health (See Sections 3, 4 and 5, Chapter 369, Statutes of 1913, which Act of the legislature will be found printed in full in this circular).

Rule 9. During such time as the quarantine, declared by the State Board of Health or the regulations substituted by the Board, shall be in force in an area, each treasurer of a county, city and county, or incorporated city or town, situated in whole or in part in the area specified, will be expected to make a monthly report to the State Board of Health, stating the methods and amounts of the collections and disbursements of the moneys of the rabies treatment and eradication fund, and the total amount of money on hand in the fund. (See Sections 6 and 7, Chapter 369, Statutes of 1913, regarding the establishment of the fund.)

GENERAL DIRECTIONS.

Directions for Sending Material to the State Hygienic Laboratory for Examination for Rabies.

Where possible, the animal suspected of having rabies should be confined and kept under observation until it dies. If it is killed in an early stage of the disease, diagnosis from microscopic examination is apt to be difficult, and results are delayed by the necessity for other tests. A rabid animal generally dies within six days. If the animal is well at the end of ten days, rabies may be excluded and examination of the brain is not necessary.

If it is necessary to kill a rabid animal, it should not be shot or injured in the head. The brain is the part required for examination, and injury to it makes diagnosis difficult or impossible.

After the death of the animal, the head should be removed by cutting through the neck far enough back to leave the skull intact. Care should be taken not to cut or lacerate the hands during the operation.

Pack the entire head in ice in a metal container, e. g., a tin pail or can. An excellent method of packing is to place in a large tin pail or can a layer of sawdust or shavings, a layer of ice, and then the head. Cover with an abundant layer of ice and add a top layer of sawdust. A suitable metal cover should be soldered in place so that there is no possibility of the escape of liquids or odors in the express car. Mark plainly, giving the name of the shipper. Send by express, without delay, to the State Hygienic Laboratory, Berkeley, California. Express charges must be prepaid.

A letter describing in detail the local situation with regard to rabies will be appreciated.

The following blank is furnished by the laboratory. If it is not at hand, write a letter giving the data indicated:

CALIFORNIA STATE BOARD OF HEALTH, State Hygienic Laboratory, Berkeley.

Please fill out this side of blank in full, and send with specimen to laboratory.

Material for Examination for Rabies.

Sender's name.....Address.....
Health Officer's name.....Address.....
Name of owner of animal.....Address.....
Description of animal whose head is sent.....
Where was the animal found?.....
Was animal killed or allowed to die?.....
How long sick?.....
Diagnosis from symptoms.....
What other animals were bitten by this one?.....
What human beings were bitten?.....
Is report to be sent by telegraph (collect), telephone (collect) or mail?.....
To whom?.....

Directions Regarding the Pasteur Treatment for the Prevention of Rabies.

If a person has been bitten by a rabid animal, it is recommended that the wound be cauterized immediately by the nearest physician, preferably with nitric acid. Arrangements should then be made at once for the Pasteur treatment for the prevention of rabies.

Persons who are able to pay for treatment without undue hardship should arrange with their physicians to have the necessary material purchased and administered. The antirabic virus manufactured by the State Board of Health is not for sale, and is not sent out to physicians.

Each person who is in need of the Pasteur antirabic treatment and is unable to pay the expense connected with private treatment without undue hardship, should report immediately to the local health authority or, if this is not possible, to a private physician. If treatment by the State Board of Health is recommended, the following blanks should be signed by the appropriate persons and should be given to the patient to be presented at the State Hygienic Laboratory, or one of its branches, or a municipal laboratory where the free state treatment is being administered.

APPLICATION TO THE CALIFORNIA STATE BOARD OF HEALTH FOR THE PASTEUR TREATMENT FOR THE PREVENTION OF RABIES.

Application of Patient or Parent or Guardian.

I hereby apply to the California State Board of Health for the Pasteur treatment for the prevention of rabies, and declare that it would be a hardship for me to pay for the treatment at the usual rates.

.....
Patient, Parent, or Guardian.

Statement of Local Health Authority or Physician.

The following named person has reported to me regarding the need for antirabic treatment by the State Board of Health:

.....
I have examined the wounds and have inquired into the circumstances, and I believe that there is a possibility that the above-named person has been infected with the virus of rabies.

Date.....

.....
Local Health Authority, or Physician.

This part of the blank should be filled out, torn off at the line, and mailed at once by the local health authority or physician to that branch of the laboratory to which the patient is sent.

I have to-day directed the following person to

apply at once to the.....laboratory for
antirabic treatment by the State Board of Health.

Name of Patient.....

Remarks:

Date.....

.....
Local Health Authority, or Physician.

The patient should go as soon as possible to the nearest branch of the State Hygienic Laboratory and should present the written statements of himself and the local health authority or physician to the director. If the director of the laboratory agrees that treatment is advisable the Pasteur treatment will be administered without charge. Persons taking the treatment at state expense must defray their own living expenses while boarding near the laboratory. If funds for this purpose are not available, the local health authority will advise as to the proper procedure.

The following cities have arranged for the administration of the state antirabic virus to their citizens at the laboratories of their health departments: San Francisco, Los Angeles, and Sacramento.

Citizens from other parts of California are treated at the nearest one of the following branches unless there is special reason for transferring patients from one laboratory to another.

The State Hygienic Laboratory, Hygiene and Pathology Building, University of California, Berkeley.

The Northern California Branch of the State Hygienic Laboratory, 406 Inverness Building, Sacramento.

The San Joaquin Valley Branch of the State Hygienic Laboratory, 32 Patterson Block, Fresno.

The Southern California Branch of the State Hygienic Laboratory, 423 Auditorium Building, Los Angeles.

If a local health authority learns that persons have been bitten by a rabid animal, inquiry should be made to find out whether they have come under treatment. If they have not done so, the risk of developing rabies and the seriousness of the disease should be explained to them. If they still fail to come under treatment, a statement of the circumstances should be written and sent to the Secretary of the State Board of Health.

STATE LAWS.

Chapter 369. (Statutes of 1913.)

An Act to prevent the introduction of rabies or other animal diseases dangerous to human beings, into portions of the state not infected; to control the spread of such diseases after introduction; and authorizing the state board of health to make rules and regulations therefor.

(Approved June 13, 1913.)

The people of the State of California do enact as follows:

Section 1. Whenever any case or cases of rabies, or other animal diseases dangerous to the health of human beings which may be declared by the state board of health as coming under the provisions of this act, shall be reported as existing in any county, city and county, or incorporated city or town in the State of California, the state board of health shall make, or cause to be made a preliminary investigation as to whether such disease does exist, and as to the probable area of the state

in which the population or animals are thereby endangered. If upon such examination the state board of health shall find that any of the said diseases does exist, a quarantine shall be declared against all such animals as may be designated in the quarantine order, and living within the area specified in said order. Quarantine shall be defined for the purposes of this act as meaning the strict confinement, upon the private premises of the owners under restraint by leash or closed cage or paddock, of all animals specified by the order.

Sec. 2. Following the order of quarantine the state board of health shall make or cause to be made a thorough investigation as to the extent of the disease, the probable number of persons and animals exposed, and the area found to be involved; and may substitute for the quarantine order such regulations as may be deemed adequate for the control of the disease in each area.

Sec. 3. It shall be the duty of all peace officers and boards of health to carry out the provisions of this act. During the period for which any quarantine order is in force all officers are empowered to kill or in their discretion to capture and hold for further action by the state board of health or its representatives, all animals in a quarantine area, found on public highways, lands and streets, or not held in restraint on private premises as specified in this act.

Sec. 4. All proper officials within the meaning of this act are hereby authorized to examine and enter upon all private premises for the enforcement of this act.

Sec. 5. Any owner, or other person in the possession of any animal then being held or maintained in violation of the provisions of this act, shall be subject to arrest on the charge of committing a misdemeanor.

Sec. 6. For the purpose of providing funds to pay the expenses incurred in connection with the eradication of diseases included under this act, a special fund, to be known as the rabies treatment and eradication fund, is hereby created for each county, city and county, or incorporated city or town in the State of California. All moneys collected in accordance with the following procedure shall be deposited to the credit of this fund with the treasurer of the county, city and county, or incorporated city or town; provided, that funds now collected from any dog tax may continue to be collected and used for other purposes specified by local ordinances.

(a) Upon the determination by the state board of health that rabies does exist in any county, city and county, or incorporated city or town, a special dog license tax shall immediately become effective, unless a dog tax is already in force the funds from which are available for the payment of expenditures in accordance with the provisions of this act. This tax shall be levied as follows: An annual tax of one dollar and fifty cents for each male, two dollars and fifty cents for each female, and one dollar and fifty cents for each neuter dog, the same to be collected by the proper authority at the same time and in the same manner as other taxes are collected; provided, however, that there shall be collected at the first collection such proportion of the annual tax as corresponds to the number of months the tax has been in operation plus one year advance payment. After this dog license tax has been established in a county, city and county, or incorporated city or town, it shall be continued in force until an order has been issued by the state board of health declaring that county, or such portion of that county as may be deemed advisable, to be free from rabies or further danger of its spread.

(b) One-half of all fines collected by any court or judge for violations of the provisions of this act

shall be placed to the credit of the rabies treatment and eradication fund of the county, city and county, incorporated city or town in which the violation occurred.

Sec. 7. Whenever it becomes necessary in the judgment of the State Board of Health or its secretary, to enforce the provisions of this act in any county, city and county, or incorporated city or town, the said board or its secretary may institute special measures of control to supplement the efforts of the local authorities in any county, city and county, or incorporated city or town whose duties are specified in this act. All expenditures incurred in enforcing such special measures shall be proper charges against the special fund created by the provisions of this act, and shall be paid as they accrue by the proper authorities of each county, city and county, or incorporated city or town in which they have been incurred; provided, that all such expenditures which may be incurred after the issuance of the order establishing the said fund and before the first collection of the tax, shall be paid as they accrue from the general fund of the county, city and county, or incorporated city and town; And, Provided, Further, that all expenditures in excess of the balance of money in this fund shall likewise be paid as they accrue from said general fund. All moneys thus expended from the general fund shall be repaid from the said special fund when the collections from said tax have been provided the money.

Chapter 391 (Statutes of 1913).

An act to authorize the State Board of Health to purchase, or prepare, and distribute, free of cost to certain persons, anti-rabic virus, and making an appropriation therefor.

(Approved June 13, 1913).

The people of the State of California do enact as follows:

Section 1. The State Board of Health is hereby empowered and directed to purchase, or prepare, and distribute free of cost, under such regulations as may be necessary, anti-rabic virus to be used in the treatment of persons exposed to rabies when said persons shall declare that it would be a hardship for them to pay for anti-rabic treatment.

Sec. 2. The sum of five thousand dollars is hereby appropriated for the purposes of this act.

Sec. 3. The state controller is hereby authorized to draw his warrant for the same, and the state treasurer is hereby authorized to pay the same.

ADMINISTRATIVE MEASURES FOR THE CONTROL OF SCARLET FEVER.*

By J. J. BENTON, M. D., Health Officer, Berkeley.

The conservation of the health of the community as a whole and the prevention of the spread of disease to the general public constitute the principal functions of the health officer. In dealing with the latter problem his administrative methods for control thereof will, of necessity, vary according as the specific disease falls within one or the other of the two great divisions of infectious or contagious diseases viz: those the etiology and mode of transmission of which have been scientifically proven, and secondly, those whose causation and propagation have not been conclusively demonstrated. In the first category fall such diseases as diphtheria, plague, tuberculosis, typhoid fever, tetanus, yellow fever, malaria, rabies, etc.; while in the second are to be placed scarlet fever, measles, German measles, whooping cough, mumps, etc.

In dealing with the former class of diseases, science has placed at our hands the means of determining the presence of the disease, e. g., by cultural methods in diphtheria, the Widal reaction in typhoid fever and the presence of the specific organism in tuberculosis, plague, tetanus, malaria, etc.; as well as giving the means of preventing their spread, i. e., eliminating carriers—e. g., two negative cultures in diphtheria; extermination of typhoid bacilli in stools and urine; destruction of fleas for plague, mosquitoes for malaria and yellow fever, etc.

On the other hand, in dealing with the second class of infectious diseases—those in which the etiology and mode of transmission have not been scientifically proven—we should be very conservative in our methods and be sure of our ground before accepting new policies.

The most important of these diseases both because of the very serious complications and sequelae to which it gives rise, as well as of the fact that it is the only one of the group in which isolation is enjoined, is scarlet fever.

Of the causation of scarlet fever we are as much in the dark as were our forefathers, but as regards its mode of transmission we have made considerable advance. Formerly, of course, it was universally agreed that this disease was transmitted through the scales, but it has been practically proven that if scales be macerated and then injected into the higher monkeys (who are susceptible to the disease) that the disease does not develop. Whereas, if they, or man, be exposed to the secretions of the nose and throat or discharges from glands or ear, the disease will then develop. Upon this hypothesis there has been a great tendency on the part of physicians to clamor for a material shortening of the period of isolation in scarlet fever, reasoning that as the nasal and pharyngeal discharges have disappeared in the majority of cases within two weeks, it works an unnecessary hardship upon the quarantined individual and his family to continue the isolation longer. My contention has been that so long as we do not know the specific cause of the disease, nor the life cycle of said cause, it is the duty of the health officer to always have an eye single to the protection of the community as a whole from disease, even though this may entail discomfort or even loss to the quarantined individual or his family. Hence I have always insisted upon a minimum isolation of thirty days and I believe my experience in Berkeley has amply justified my action. As an illustration I will cite an epidemic of scarlet fever which broke out in the State Deaf, Dumb and Blind Institute last spring. After some twenty-nine cases had appeared and from four to ten new cases were being reported weekly, investigation showed that the children were only kept in the hospital until the throat symptoms had subsided, usually ten to fourteen days, and were then allowed to return to the classroom and that this accounted for so many "return cases." I thereupon applied to the new attorney for the State Board of Health regarding my jurisdiction as local health officer over the

* Read before the Fifth Annual Conference of State, County, and Municipal Health Officials, Venice, October 6 to 11, 1913.

state institutions located in Berkeley. He advised that these institutions came under the health regulations of Berkeley just as any other institution or householder does, thus reversing the two former attorneys for the State Board of Health, who claimed that the local health officer had no jurisdiction. Armed with this opinion I insisted upon thirty days isolation in each case and I am pleased to say that after the enforcement of this rule there were no return cases.

In the light of this experience I shall continue to insist upon a minimum isolation of thirty days, for who amongst us has not seen the diphtheria bacillus live in the throat for many weeks after the clinical symptoms of diphtheria had disappeared and the patient was apparently in perfect health? And who amongst us would not have given the individual a clean bill of health? And yet, he would have been a carrier of the disease and a constant menace to the community, had it not been for the fact that we can determine by cultural methods the presence or absence of this infective agent, viz., diphtheria bacillus. Likewise, in scarlet fever in two weeks the symptoms clear up, the throat is macroscopically clean, but having no means of determining scientifically whether or not such is the case, in order that no carriers of scarlet fever escape we should insist upon a sufficiently long isolation period to thoroughly protect the community from such a contingency.

RATING THE EFFICIENCY OF HOSPITALS AND INSTITUTIONS FOR THE TUBERCULOUS.*

By BURT F. HOWARD, M. D., Director of Bureau of Tuberculosis, California State Board of Health, Sacramento.

One of the provisions of the new law creating a Department of Tuberculosis is that it shall be the duty of the director to inspect and investigate all institutions, both public and private, where tuberculous patients are treated. Also he shall prepare annually for each institution a report of its rating on sanitary construction, enforcement of sanitary measures, adequate provision for medical and nursing attendance, provision for proper food, etc.

There are certain advantages of such a classification which suggest themselves. First, it is a sort of "taking of stock," as it will give the department more accurate knowledge than is now available as to one essential portion of its equipment for tuberculosis control, viz., the location, capacity and efficiency of hospitals and sanatoria treating tuberculosis.

By the word efficiency we need not understand merely technical success, but also a certain fitness for the desired end. Assuming that we have in every part of the state hospitals and sanatoria which are hygienic as to construction and management, give good food and all that can be desired in the way of nursing and medical attendance, there may yet be ways in which they are not efficient with regard to the problem of tuber-

culosis as a whole, for example: patients may not go to these institutions in such numbers as to essentially modify the total number uncared for, or they may remain in them too short a time to accomplish a cure or to obtain any adequate educational benefit. Or they may stay in them during a comparatively harmless period of the disease and go to live with relatives during that stage when they are expectorating the largest number of bacteria and are themselves most helpless. The lack of efficiency in these respects may be due to high cost which prevents many from having the benefit of private sanatoria and shortens the stay of many others. It may be due to the fear of the publicity attached to sanatoria for tuberculosis, or rather, perhaps I should say a real phthisiophobia. Patients are often afraid of tuberculosis in other patients, afraid to be with them, and afraid to be seen with them because of the public opprobrium which attaches to the disease. Many also dread the sight of disease in others. Or, again, persons needing treatment may refuse to go to institutions because they will be too far removed from their friends and relatives, will miss various social opportunities and advantages, will be bored by a life of inactivity, or obliged to do work which they would not have to do at home.

Many patients will refuse to go to public institutions, especially those of the county, for various reasons, chief of which is the fear of pauperization, or the dislike they have for accepting charity. I have known of the same attitude toward the public school, but fortunately this is not a common idea in this country, and perhaps if the public hospitals for tuberculosis were developed in somewhat the same way as the public schools have been, there would cease to be the same objection to them. This would, perhaps, mean higher requirements for the hospitals for tuberculosis, at least in some particulars, just as the public school system has often increased the efficiency of private schools or village schools brought under the supervision of the state.

The objection on the ground of pauperization could be met by requiring that those who are able to do so pay a proportion of the cost. This plan already in practice in certain county hospitals will, to a certain extent, overcome this objection when it becomes generally known.

Once at the institution certain types become homesick, and so shorten their stay in spite of the fact that they are improving rapidly while others suffer so with nostalgia that this alone prevents recovery.

Thus we see that efficiency may depend upon cost to the patient, location and accessibility, attractiveness of construction and environment with various social factors including occupation and amusement for the patients. Even in a county or state institution offering care for a nominal rate or entirely free to the individual, there will still be the same questions to consider, and the spread of tuberculosis will be prevented only to the ex-

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tent that individuals can be induced to remain in these institutions a sufficient length of time.

After having made a careful study of existing institutions we will be in a position to make comparisons between the various kinds, as well as with the ideal which we are able to develop. This may well be of benefit both to the state and to the individual institution if the report given to the institution be accepted in the spirit in which it is offered and, no doubt, as it was intended by those who framed the law. Adverse criticism would fail in its object if it were to discourage a moderate beginning, even though it might be far from the ideal. It would be useless in the case of a flourishing institution if entirely ignored.

If the report of the rating which the law requires be adverse in some respects it may prove stimulating to the more desirable institutions and may be the means of bringing less desirable ones up to a proper standard. If there should be found, or there should ever develop within the state a class of unethical, money-making institutions, it is to be hoped that an adverse rating would lead to their elimination or a complete change in character.

Taking up the subject of technical rating, it has been proposed that the method used by health departments for the sanitary inspection of creameries, milk depots, dairies, etc., might serve as a model, and I have attempted to make such a score card not for actual use at present, as it does not seem to me entirely practicable under conditions as they exist, but as a means for getting in mind ideal conditions. I would be pleased if those present would discuss this plan for carrying out the provisions of the law.

After all has been said, it still must be evident that an institution worthy of the name of hospital, or sanatorium, cannot be adequately represented by figures on a score card. Someone has characterized an institution as being "the lengthened shadow of a man," which I suppose means that it is not the site, the buildings, the character of the food, nor even the skill of the medical and nursing staff which determine the essential value of an institution, but that this depends upon the actuating spirit, or perhaps the dominant idea, and that this spirit is almost always a reflection of the personality of the superintendent. However, the character of an institution, like that of an individual, is often more complex than could be implied in such a saying.

The dominant idea of the patients is a very practical and important subject for consideration. A very persistent and often easily answered question is, Do patients enter this institution with the hope and expectation of recovery, and do they maintain this idea through prolonged disappointment? Or do they enter leaving all hope behind, regarding the hospital, so to speak, as a place of last resort?

While the mental attitude of the patients depends partly upon that of the medical and nursing staff, it also depends upon the past record of the

institution or the kind of advertising it has received. It is the expression of the rating of a given hospital in the opinion of the public, and this is my reason for emphasizing this point. Without a good rating in public opinion no public hospital or private sanatorium can hope to be a factor in the problem of tuberculosis.

Another very regrettable phase of public opinion is the tendency to regard tuberculosis institutions as pest houses or public nuisances, the public being, as a rule, quite indifferent to the tuberculous individual until he enters an institution where, in fact, he learns how to protect the public. Then he, as well as the institution, is regarded with suspicion, to say the least. It is a part of our program to educate public opinion to a proper attitude toward institutional treatment of tuberculosis.

In attempting to standardize and idealize institutions which are to treat mainly those who cannot afford home treatment (at least, this is probably the case for the present and coming generation) we shall wish to bear in mind that while certain structural features are more or less essential to economy of administration and ideal sanitation, such as marble walls and tile floors, yet even these may cultivate an extravagance of taste which would tend to discourage later attempts at home sanitation under less favorable circumstances. Also, we will have to remember the class of patients for whom the institution is intended. It is not easy to properly compare those intended for incipient with those planned for advanced cases, and it is particularly desirable that these should be as distinct as possible. It would be well also to add another type, viz., an institution for convalescent cases.

In closing I would like to express the hope that your new department of tuberculosis will be able to accomplish the purpose for which it was created. At first it will be necessary to get at the facts more completely than has hitherto been done, especially to discover how many active cases of tuberculosis there are in the state and, so far as possible, to form an estimate of what proportion of these would be likely to enter institutions. The finding of these patients will require the co-operation of all physicians and health officers. The medical profession is not awake to the need of registration of tuberculous cases and many do not know that tuberculosis is legally a reportable disease. We must look largely to the local health officer to bring about the registration of every case of open tuberculosis of the lungs.

When the state has a register of tuberculous cases it will be in a position to protect the county hospitals against non-residents. The care of non-residents or provision for their deportation and the prevention of pauper immigration from other states are the peculiar problems of the state as distinguished from the county.

While these measures are being worked out, there are two other natural steps in the solution of the problem which I hope to be able to encourage. One is the tendency, already referred to, for county hospitals to give special accommodation to

tuberculous patients for a special charge, making all patients pay something if they can.

The other step is the tendency for private philanthropic dispensaries to gradually yield a portion of their financial burden to the city and the county. We cannot afford to be without the spirit of the philanthropic dispensary, and the men developed by it, but can we not have the same spirit, and perhaps the same men, in public dispensaries?

In making this suggestion I do not mean to imply that the time has come for doing away with private philanthropic dispensaries, and I do think that at present we need as many of both public and private dispensaries as we can get, but certainly the treatment of the tuberculous poor is a civic duty which cannot be adequately done by private charity.

THE VENEREAL DISEASE PROBLEM.*

By CHARLES R. BLAKE, M. D., Health Officer,
Richmond.

In a discussion of venereal diseases, I believe that a proper control of prostitution is the proper weapon. Prostitution is the burning question of the day. The interest in this question is nationwide and you can scarcely find any intelligent person who has not been thinking about it and who is not seeking information and advice.

Investigation has shown us that the cost of immorality to the country constitutes an enormous waste of hundreds of millions of dollars, added to the combined totals of our appalling national liquor and tobacco bills. But investigation cannot reveal or even faintly suggest the human suffering, sorrow, misery, degradation, disappointed hopes and family tragedies that follow in its wake; it cannot sum up the wrecked lives of several millions of men, women or children, nor the enormous and increasing sterility, which alone is alarming from the standpoint of national conservation.

Proven statistics of the City of New York showed that one in every five persons was affected with some form of venereal disease. As a matter of fact, the exact figures are immaterial, for we could not appreciate the awfulness of the evil if it were only one-tenth of the amount, and this is all due to the public prostitute. We are also aware that houses of prostitution are everywhere associated with the utmost political corruption; that officers of the law, doctors and politicians as well as the liquor merchant, make enormous profits from the traffic.

We know that there exists a vast army of vile creatures, called pimps, panders and macks, the most degraded of all human beings, who enslave and then fatten on the life-blood of their helpless girl victims; girls who after a few short years of sexual debauchery, drunkenness and drug intoxication, are dumped on to the street to drop yet lower, to be gathered into the almshouses or the hospitals to die.

Now what are the causes of prostitution? First of all, prostitution does not spring from the nat-

ural proneness of women toward vice. The prostitute herself, however degraded she may become, is a product and not a cause of anything, except in so far as she transmits contagious diseases grafted on her person by men; nor is the despised pimp the cause of the prostitute, nor yet the madam, nor are the officers of the law who tolerate the houses and graft on the inmates. We draw nearer the true source when we discover that many girls are driven to a life of shame by the low wages paid in factories and department stores. The blame, the cause of all causes, lies wholly on the shoulders of an indifferent public, upon our churches and upon our ministers, whose age-long ignorance of the facts is but added proof of neglected opportunities and of guilt. The guilt springs from the complete separation and loss of community interests of rich and poor, from division of society into classes without mutual interests.

The causes lie in the injustice of our industrial conditions, in many of our sweatshops, in our stores and factories. They lie in housing conditions, by which we rob the poor of all privacy and make cleanliness impossible. In the tenements they cry in vain for air, for light, for water and for provisions for decency and privacy for attending the wants of the body. Consider the filthy streets, the small courts, and poor little tots driven to get exercise and play their games in our dirty, dusty asphalt streets in the absence of proper playgrounds; shall we follow them as they grow up but gravitate downward to the low amusements provided to harvest their nickels, to the saloons, the dancehalls and the Sunday parks outside the city and then on down to a life of crime or immorality?

Venereal diseases are forms of contagion. Their control is the natural next step for departments of health. They are the only forms of markedly contagious disease not now definitely proceeded against by health officers, for most health officers, not knowing what to do, shut their eyes and affect to ignore them. Let us also lay aside that old ghost, ever popping up and pretending to be lively and scaring a lot of uninformed and untutored people. The name of that ghost is "segregation." Every man who has read nothing but the papers and has spoken to a few of his friends, naturally thinks that segregation is just one clever and natural way to handle prostitution. But this plan has been tried for centuries and especially noted during the past century, and it has been clearly proven that it does not work and that by it all the worse evils of prostitution are fostered, propagated and fastened upon the community. Segregation does not segregate more than one in ten women. Even if it worked ideally in controlling the women, it has never even pretended to control the men who are the active agents in carrying the infection from house to house, and for this reason alone it is a logical folly. It is also inseparably bound up with graft and official corruption.

In 1912, the New York Health Department adopted rules about along the same lines as the Chicago ordinance of 1909. They began enforce-

* Read before the Fifth Annual Conference of State, County, and Municipal Health Officials, Venice, October 6 to 11, 1913.

ing them in January last. By these rules, venereal diseases are made reportable. The register in which they are reported is not a public document in the sense of being accessible to every one. If experience demonstrates the need, special dispensaries and perhaps hospitals will be established. The best and most up-to-date treatment is given free if the affected person cannot pay. Special insistence is put upon the continuance of the treatment until cure is complete. The plan has met with some opposition; nevertheless, in less than six months, more than six thousand cases were reported. It has been found in New York rather easy to get venereal diseases reported.

With the abolishment of the "redlight district" in San Francisco and eventually all over the state by law which will shortly be voted on by the people of this state, known as the "Abatement Law," and it will surely win, it will be absolutely up to the boards of health of all cities to formulate a plan, which should be the same all over the state, to exterminate, if possible, all venereal diseases. The police authorities are out of it, as they acknowledge by this law that they are not able to control prostitution or venereal diseases. I do not think there is any way of preventing private prostitution, but with the co-operation of all physicians and the expenditure of some money on the part of all the cities, venereal diseases would soon be under complete control. All cases, women and men, should be treated free of charge, if not able to pay, and should be kept under strict observation until a permanent cure is effected, and if necessary, hospitals should be provided or wards set aside especially for the treatment of all such diseases.

THE FIFTH ANNUAL CONFERENCE OF STATE, COUNTY, AND MUNICIPAL HEALTH OFFICIALS.

By W. A. SAWYER, M. D., Berkeley; Secretary of the Conference.

The Fifth Annual Conference of State, County, and Municipal Health Officials took place at Venice, California, from October 6 to 11, 1913. The conference was held in conjunction with the Sixteenth Annual Convention of the League of California Municipalities. The first day was devoted to registration, inspection of the manufacturers' and pure food exhibits, and attendance at the opening addresses before the general meeting.

TUESDAY, OCTOBER 7, 1913.

MORNING SESSION.

The meeting was called to order at 10 A. M. Dr. Wm. F. Snow, Secretary of the State Board of Health, officiated as chairman. An address of welcome was delivered by Dr. W. M. Kendall, Health Officer of Venice. This was followed by a roll call, to which each delegate responded by stating briefly what he considered to be his greatest public health problem. Fourteen of the delegates complained of difficulty in getting adequate sewerage; five reported unsatisfactory water supplies; four had met with difficulties in enforcing

quarantine for communicable diseases; two had had trouble in controlling smallpox and enforcing vaccination. Others found their most serious problems in the management of the tuberculosis cases, the abatement of nuisances, the collection of garbage, the disposition of cases of leprosy, the methods of control of communicable diseases in general, and the inability to secure adequate funds for public health work.

A list of delegates attending the conference will be found at the end of this report.

AFTERNOON SESSION.

The subject for the afternoon was "Standard Methods of Public Health Administration." Dr. F. W. Browning, chairman of the Committee on Standard Methods of Public Health Administration, acted as chairman, and presented the opening paper, entitled, "The Aims and Objects of the Committee on Standard Methods of Public Health Administration." Dr. J. N. Force, secretary of the committee, read a report of the work of the committee in drawing up rules to be submitted to the State Board of Health for acceptance. As introduction to the report he read a paper on "Recent Legislation on Communicable Diseases in the United States." Dr. Force read to the conference the regulations for the control of rabies, which had been recently issued by the State Board of Health. These regulations showed a form which he recommended as being suitable for a complete code of regulations of the State Board of Health. The committee's recommendations for the control of the various diseases were taken up in order, and were accepted after general discussion and amendment.

Dr. Jackson Temple of Santa Rosa read a paper on "Suggested Improvements in Our Methods of Controlling the Common Contagious Diseases."

A paper entitled "Administrative Measures for the Control of Scarlet Fever," was read by Dr. J. J. Benton, health officer of Berkeley.

A paper on "Modifications in Administrative Measures Necessitated by the Carrier Problem," by Dr. F. W. Browning, was read by title.

WEDNESDAY, OCTOBER 8, 1913.

MORNING SESSION.

The meeting was opened at 9 A. M., with a continuation of the discussion of methods for controlling communicable diseases.

Dr. W. A. Sawyer, director of the Hygienic Laboratory of the State Board of Health, gave a brief report of the activities of the laboratory since the last conference. During the year the laboratory administered the Pasteur anti-rabic treatment to 242 persons, and 345 animals' heads were examined for rabies with positive results in 297 instances, figures greater than those for the previous years combined. Many special epidemiological investigations were made, and the usual routine diagnostic work showed a considerable increase.

Professor M. E. Jaffa, director of the Food and Drug laboratory of the State Board of Health,

read a report for the past year, and discussed new legislation having a bearing on the enforcement of the food and drug laws.

A paper on "Rabies in San Francisco, with Notes on Some Recent Additions to Our Knowledge of the Disease," had been submitted by Dr. R. G. Brodrick, health officer of San Francisco, who was unable to be present. His paper was read by the secretary of the meeting.

Dr. Stanley P. Black, health officer of Pasadena, gave a talk on "The Health Officer's Duty in Connection with the Treatment of Rabies." Mr. H. O. Jenkins, health officer of Palo Alto, discussed both papers on rabies and emphasized the necessity for educational work by the health officer if rabies is to be suppressed.

Dr. L. M. Powers, health commissioner of Los Angeles, gave an account of the measures instituted against poliomyelitis in Los Angeles during the outbreak of last year, and discussed the epidemiology of the disease.

Dr. William Simpson, health officer of Santa Clara County, read a paper entitled "The Relation of the Health Officer or Sanitarian to Vocational Guidance." The paper was discussed by Dr. J. N. Force of Berkeley.

The meeting adjourned at noon and the delegates took special cars to Santa Monica, where they were entertained at lunch by the city. After lunch many of the delegates inspected the municipal pier and the sewage disposal plant.

AFTERNOON SESSION.

The subject for this meeting was "The Control of Tuberculosis." Dr. C. C. Browning of Los Angeles presided and read a report on "The Work of the State Tuberculosis Commission."

The second paper was read by Dr. Robert A. Peers, health officer of Colfax, and president of the State Association for the Study and Prevention of Tuberculosis. His subject was "Some Points Regarding Tuberculosis of Interest to the Health Officer."

Dr. George E. Tucker, health officer of Riverside, and secretary of the State Association for the Study and Prevention of Tuberculosis, read a paper on "The Activities of the Organized Anti-tuberculosis Societies in California."

The last paper of the afternoon was presented by Dr. Burt F. Howard, director of the Department of Tuberculosis of the California State Board of Health. His subject was, "Rating the Efficiency of Hospitals and Institutions for the Tuberculous." The papers were followed by a discussion of all the papers on tuberculosis by Dr. W. F. Snow, Dr. Wm. Simpson, Dr. O. G. Wicherski, Dr. R. H. Mackerras, Mrs. Jensen, Dr. Wm. K. Lindsay, Dr. J. N. Force, Dr. G. E. Tucker, Dr. James H. Parkinson, Dr. Robert A. Peers, and Dr. Burt F. Howard.

THURSDAY, OCTOBER 9, 1913.

MORNING SESSION.

The meeting was called to order at 9:30 A. M.

Dr. James H. Parkinson, vice-president of the State Board of Health, occupied the chair. Dr. O. G. Wicherski, health officer of San Diego County, spoke on "Measures Against Smallpox." A paper by Dr. J. N. Force on "A Test for Immunity Against Cowpox" followed. As illustrations for this paper, a number of pictures, some of them color photographs, were thrown on a screen by means of a stereopticon. Both papers were discussed by Dr. W. F. Snow, Dr. Wm. K. Lindsay, Dr. S. G. Bransford, Dr. F. W. Browning, Dr. J. H. Haile, Dr. O. P. Paulding, Dr. J. H. Parkinson, Dr. Jackson Temple and Dr. J. N. Force.

The next paper was entitled "The Leper Problem," and was read by Dr. E. O. Sawyer, health officer of Los Angeles County. He was strongly in favor of government care for lepers. Dr. L. M. Powers advocated the establishment of a state or government colony, preferably the latter. Others who discussed the paper were Dr. C. R. Blake, Dr. O. P. Paulding, Dr. Stanley P. Black, and Dr. E. O. Sawyer.

A paper on "The Milk Problem in a Small City" was read by Mr. H. O. Jenkins, health officer of Palo Alto. Mr. Hassan, state dairy inspector, and Dr. Jackson Temple participated in the discussion.

AFTERNOON SESSION.

A joint meeting of the League of California Municipalities and the Health Officials' Conference was held. Various subjects of general interest were presented. Del Monte was chosen as the place for next year's meeting.

At 4 o'clock the meeting adjourned and the delegates were taken in automobiles to see Santa Monica and the Soldiers' Home.

EVENING SESSION.

In the evening a joint meeting of the Health Officials' Conference and the League of California Municipalities was devoted to the consideration of "Public Sanitation as Related to Water Supplies and the Disposal of Sewage and Refuse." Mayor Mott of Oakland presided. Mr. J. J. Jessup, city engineer of Berkeley, read a paper on "Municipal Refuse Disposal." Mr. C. G. Hyde, professor of sanitary engineering in the University of California and consulting engineer to the State Board of Health, presented a paper on "Problems in the Design and Operation of Imhoff Tanks in California." Mr. F. A. Nikirk, civil engineer, spoke regarding "The College Park Sewage Disinfecting Plant and the Proposed Treatment Works at Los Gatos." This paper was illustrated with models of the sewage treatment works. Dr. Wm. K. Lindsay, health officer of Sacramento, read a paper on "Typhoid Fever in California and Its Relation to Water Supply and Sewerage."

FRIDAY, OCTOBER 10, 1913.

MORNING SESSION.

The special subject for the meeting was "Sociological Problems Affecting Public Health." Dr. James H. Parkinson was in the chair. Before pro-

ceeding to the regular business of the meeting a short time was devoted to a continuance of the consideration of the control of communicable diseases. It was moved, seconded, and carried, that the Committee on Standard Methods of Public Health Administration be requested to follow the recommendation of Dr. Force in favor of considering the immunity reaction in drawing up regulations for the control of smallpox. A lively discussion arose over the regulations proposed for the control of typhoid fever. It was moved, seconded, and carried, that these regulations be rewritten and submitted to the health officials through the mails for written ballot.

The following resolution was proposed by Dr. W. K. Lindsay, health officer of Sacramento, and was passed: "Be it resolved, that it is the wish of this convention that the Committee on Standard Methods of Public Health Administration recommend to the State Board of Health that those portions of its report dealing with the technic of vaccination and the reaction of immunity be printed in pamphlet form and distributed to every physician in California."

A paper on "The Housing Problem and the Public Welfare" was read by Dr. F. E. Corey, health officer of Alhambra. The next paper was on "Housing" and was presented by Mr. Dana W. Bartlett, a member of the Los Angeles Housing Commission. Both papers were discussed by Dr. Burt F. Howard and Dr. L. M. Powers.

A few minutes before eleven Dr. Parkinson reminded the conference that the opening of the Panama Canal was about to take place and called attention to the importance of the event in the history of preventive medicine. Out of respect for the work of the medical profession in making the canal possible, and more especially for that branch of the profession which is devoting itself to the improvement of the public health, the members of the conference rose and remained standing until the Gamboa dyke had been destroyed.

The regular program was then resumed and Dr. Lindsay, Dr. Cory, and Mr. Bartlett discussed housing problems.

Dr. Blake read a paper on "The Venereal Disease Problem." The discussion was opened by Dr. Powers, who was against the segregation of prostitutes. He regretted that there were no reliable figures on which an opinion could be based regarding the prevalence of venereal disease before and after the abolition of segregation in Los Angeles. Dr. Lindsay reported that there had not been sufficient time since the abolishment of segregation in Sacramento for an opinion to be formed regarding the ultimate effect of the measure. Dr. Snow stated that segregation has been regarded as a failure where tried and that the measure can be put out of consideration because the American public will not permit such a system. Other methods must be devised. Dr. Tucker suggested that the cause would be helped if the State Hygienic Laboratory made free Wassermann tests for syphilis.

A "Report of the Meeting of the American

Public Health Association" was read by Dr. Tucker.

The meeting then took up various matters brought up by the delegates. Dr. Bransford of Suisun brought up for discussion the problem presented by advanced cancer cases who are unsightly and whose presence in public places is objected to by the people.

The following resolution, similar to one already passed by the League of California Municipalities, was presented and carried:

"*Resolved*, That a joint committee of three suitably trained men be appointed by the League of California Municipalities and the Health Officials' Conference for the purpose of having an investigation made of the several refuse incinerators on the market, and that the committee be requested to report at the next general meeting on types (not makes) which can be expected to yield satisfactory results under stated conditions."

Dr. Snow announced that the American Red Cross was preparing to send out nurses to organize public nursing. Dr. Temple suggested that special attention should be paid at the next annual conference to the organization of the health officials with the object of bringing about better co-operation and a uniform system of "following up" dangerous situations with regard to communicable disease.

The meeting adjourned shortly after noon. Some of the members departed for their homes while others inspected the neighboring cities to find out the progress made in sanitation.

During the conference there was an exhibit at the auditorium and in booths on the pier. The State Food and Drug Laboratory was represented by an educational exhibit of pure and adulterated foods and of charts showing food values of various substances.

LIST OF HEALTH OFFICIALS ATTENDING THE CONFERENCE.

Dr. H. E. Piper, Santa Cruz; Dr. J. H. Haile, Winters; Mr. H. O. Jenkins, Palo Alto; Dr. J. N. Force, assistant professor of epidemiology, University of California (Berkeley); Dr. B. F. Howard, director bureau of tuberculosis of State Board of Health (Sacramento); Dr. F. W. Browning, Hayward; Dr. B. F. Eber, San Leandro; Dr. John Wehrly, Santa Ana; Dr. J. J. Benton, Berkeley; Dr. Frank R. Woolsey, Albany; Dr. E. H. Coleman, Sunnyvale; Dr. J. A. Randolph, Glenn County (Willows); Dr. O. P. Paulding, Santa Maria; Dr. O. G. Wicherski, San Diego County (San Diego); Dr. L. R. Willson, Fresno; Dr. Wm. L. Hood, Tuolumne County (Sonora); Dr. E. D. Ward, Los Angeles; Dr. Wesley Thompson, Huntington Park; Dr. L. M. Powers, Los Angeles; Dr. Stanley P. Black, Pasadena; Dr. James H. Parkinson, Vice-President State Board of Health (Sacramento); Dr. W. H. Parker, Santa Monica; Dr. H. A. Putnam, Inglewood; Dr. J. H. Mudd, Merced County (Merced); Dr. J. E. Hubble, Lordsburg; Dr. R. H. Mackerras, Sierra Madre;

Mrs. Jensen, Municipal Nurse, Sierra Madre; Dr. R. B. Davy, Sierra County (Downieville); Dr. A. W. Bixby, Watsonville; Miss Anna C. Jammé, Director of Bureau of Nurses and Hospital Registration of the State Board of Health (Sacramento); Dr. C. A. Whiting, South Pasadena; Dr. W. G. Beattie, San Mateo County (Colma); Dr. Jackson Temple, Santa Rosa; Dr. C. C. Browning (Los Angeles); Mr. Dana W. Bartlett, Member of the Los Angeles Housing Commission (Los Angeles); Dr. Wm. Simpson, Santa Clara County (San Jose); Dr. F. W. Thomas, Claremont; Dr. Wm. K. Lindsay, Sacramento; Dr. L. Q. Thompson, Butte County (Gridley); Dr. S. G. Bransford, Solano County and Suisun; Dr. W. M. Kendall, Venice; Dr. Theo. F. Johnson, National City; Dr. F. E. Corey, Alhambra; Dr. Geo. D. Keeler, Elsinore; Mrs. W. E. Shepherd, Ventura; Dr. George E. Tucker, Riverside County (Riverside); Dr. Robert A. Peers, Colfax; Dr. Charles R. Blake, Richmond; Mrs. Cora D. Lewis, Los Angeles; Dr. R. D. Adams, Monrovia; Dr. W. F. Snow, Secretary State Board of Health (Sacramento); Dr. C. H. Phinney, Eagle Rock; Dr. Will H. Holmes, Pomona; Mr. M. E. Jaffa, Food and Drug Laboratory of the State Board of Health (Berkeley); Dr. W. A. Sawyer, State Hygienic Laboratory of the State Board of Health (Berkeley); Dr. E. O. Sawyer, Los Angeles County (Los Angeles); Dr. E. M. Wilder, Sacramento.

PELLAGRA.*

By R. W. HARBAUGH, A. B., M. D., San Francisco.

Pellagra is a symptom complex rather than a disease, characterized by periodical manifestations of gastro-intestinal, skin, nervous and mental changes.

It was endemic in Spain in the year 1735. Casal in 1762 described it as *La Mal De La Rosa*. Frapoli, in Italy, in 1771, called it "*Pellagra*" or "*Dry-skin*."

It next spread to France and Roumania, being reported in the latter part of the eighteenth century, and has only been recognized in the United States in the last fifty years.

At the present time there exist about 100,000 cases in Italy, 50,000 in Roumania, and fewer numbers in Spain, France, Portugal and Egypt.

The first case in the United States was reported in South Carolina in 1908. Later cases were reported in Alabama. It has since been reported all over the United States, especially in the southeastern states. We have at present 50,000 to 60,000 cases in the south.

There were 368 deaths from the disease in the United States in 1910.

Etiology.—There are two general theories.

(a) Food Intoxication Theories:

1. Corn or maize is supposed to play the same role as rice does in *beri beri*. In support of this hypothesis we have

the fact that although isolated cases have occurred in persons without access to maize, the endemic cases have always corresponded geographically to the areas of cultivation and consumption of corn. The presence of toxic substances, alterations in the grain before or after consumption, fungi, spoiling of the grain, have been suggested as factors.

2. Lombroso isolated (*Pellagrozine*) from maize and produced pellagra-like symptoms in animals.

(b) Infection Theory:

In regard to this theory we may state as follows:

1. No specific germ has been found.
2. It is apparently neither contagious nor infectious.
3. The following agents have been suggested:

First—Sambon suggested it as a protozoan disease carried by the sand-fly. (*Genus Simulium*.)

Second—Cheney of Italy says it is due to the common blue mold.

- (c) An hypothesis has been offered by Dr. Long of the United States Public Health Service, based on a study of 53 cases in South Carolina in 1910. Briefly, it is as follows:

1. Amobae were found in all these cases; these cause ulcerations, and the latter plus secondary infections of the gastro-intestinal tract interfere with digestion and absorption. As the process progresses the condition spreads to the liver and pancreas. Food products decompose, toxins are absorbed.
2. The central nervous system being the highest developed tissue is first affected by these toxins.
3. Skin lesions result from two causes:
 - (a) Direct result of central nervous system changes.
 - (b) Pressure.

Regarding this pressure theory, Dr. Long finds that the lesions follow nerve distribution, and that X-Ray and autopsy show foramina closed by certain deposits. The cervical nerves increase in size from first to eighth, while the foramina normally decrease. Thus we would expect the region supplied by the seventh and eighth nerves to be affected first by the deposits mentioned, and such is the case, the lesions first appearing on the dorsal radial region. Likewise, the first sacral nerve is the largest in the body, and this, plus the tortuosity of the sacral foraminae, shows us why regions supplied by the latter nerve are first affected in the leg.

Pathology.—The acute cases have shown atrophy of the intestinal walls, fatty degeneration of internal organs and central nervous system changes. The cord changes are fairly constant, there being degeneration of the lateral columns in the dorsal region, and of the posterior columns in the cervical and dorsal regions.

The stool contains mucus, blood, pus, crystals

* Read before Cooper Clinical Society of San Francisco, September 15, 1913.

and parasites, including amobae. The stools are usually fermenting and acid.

Diagnosis and Symptoms.—Onset: 1. Occurs in spring or autumn with headache, weakness and depression.

The digestive system is affected early. In the mouth sensation of heat, loss of taste, stomatitis, raw beef tongue. Anorexia, nausea and vomiting are common. Diarrhea, often severe and painful, followed by serious and bloody stools, alternating with periods of constipation.

The skin lesions start with an erythema on the dorsal radial region of the hand, resembling sunburn; are symmetrical and sharply defined; extend usually to the cuff line where it ends abruptly, or it may extend to the elbow. The lesion darkens, later desquamates and may leave some pigmentation. Severe cases have similar lesions on the neck (Cassell's collar), down the chest, on the forehead, butterfly erythema on the cheeks; also the anterior surface of the leg and dorsal surface of the foot are affected. In rare instances there is excoriation of the genitals in the female, with pruritis and discharge. Similarly, in the male, there is an erythema of the scrotum and penis.

Nervous Symptoms.—1. Headache and vertigo. 2. Confusion, lassitude, irritability and dullness. 3. Anxiety and depression. 4. Changes in disposition. 5. Hallucinations of sight and hearing. 6. Loss of memory. 7. Rarerly dementia or mania. 8. From the cord lesions we may get the following: (a) Ataxia. (b) Spasticity, with increased knee-jerks. (c) Disturbances of sensation. (d) More rarely paralysis of Spinchters and lost leg reflexis.

Clinical Tests.—1. Stool as mentioned. 2. Secondary anaemia.

Pellagra must be differentiated from scurvy, erythema, thrush, G. P. I., and acute infections.

Prognosis.—1. Serious in United States. 2. More favorable where it has existed for a long time. For example: the mortality in Italy is only 4 per cent. 3. Acute forms with fever—grave. 4. Moist erythema—grave. 5. Asylum cases—serious. 6. In chronic cases without mental involvement the prognosis is best.

Treatment.—

1. Prophylaxis.

Avoid: (a) Peasant life

(b) Poverty.

(c) Corn.

(d) Isolation not necessary.

2. General treatment.

(a) Hygienic.

(b) Change of climate.

(c) Rest in acute attack.

(d) Arsenic in various forms.

(e) Transfusion.

3. Treatment by Dr. Long in his cases.

(a) Cereal diet, with exception of oatmeal.

(b) Sodium bicarbonate after meals till stools are alkaline.

(c) Pancreatin Grs. V, t.i.d. salol coated.

(d) Quinine bisulphate enemas in normal salt solution 1/8000.

(e) Flush bowels twice weekly with saline enema.

C. K.—Age 23, housewife; born in the United States; married. Entered the Stanford service at the City and County Hospital under Dr. H. E. Alderson August 14, 1913.

Complaint.—Pain in the back and lower abdomen.

Family History.—Father died of dropsy. Mother died of cancer of the stomach. No history of tuberculosis. Husband is healthy.

Past History.—As a child patient had chicken-pox. Never sick since. Never had malaria, typhoid, rheumatism or pneumonia. Has headaches quite often and feels dizzy. Vision not so good in past four months. Objects blur and appear dim. No head colds or other trouble. During the past four months lips have been dry and parched. Gums have been sore. Tongue has been fiery red and tender on both surfaces. Teeth have given no trouble, and throat has not been sore. Patient says saliva has run from corners of mouth for four months. Has a discharge from right ear at times. Has had few chest colds or persistent cough. Never spit blood. Has night sweats at times, but has not lost weight. No praecordial pain or palpitation. Is short of breath on exertion. Ankle never swollen. Appetite very poor. Bowels have been irregular for past four months. Patient has had severe diarrhea for periods of two weeks at a time, but never passed bloody or tarry stools. At these times she was nauseated and vomited twice. Had dull, heavy pains in the lower abdomen. Pains seemed to run down the legs at times and back felt tired. Never jaundiced.

Diet.—Breakfast: (1) mush, (2) eggs, (3) bread, (4) coffee. Lunch: (1) pancakes, (2) meat, (3) potatoes, (4) tea, bread and butter. Dinner: (1) tea, (2) bread and butter, (3) meat, (4) potatoes. Patient says the only thing she specially cares for is mush, and that she has been accustomed to eating large quantities of different varieties. Never eats corn.

In the past four months patient has had frequent burning urination. Never any bloody urine. Patient has been married six years. Has two healthy children. Never had a miscarriage. Menses have been irregular for past four months. She has been very nervous for six or seven months past, having headaches and dizzy spells, perspiring easily, and sleeping very poorly at night. Has noticed that her memory has been getting poor in the last few months. Says she cannot remember the most simple things any more. About four months ago hands became red as fire and patient thought she had been sunburned. The redness was confined to the backs of the hands and came first on the thumb and index finger, spread over the whole dorsal surface, and gradually extended up the forearm to a little above the elbow. At the same time, red blotches appeared on the cheeks and at the angles of the mouth. A red band also came around the neck. The skin became rough and then normal in about one month. Patient was born and reared in San Francisco, never having been farther away than Oakland. Does not use alcohol or tobacco. Never used any drugs. Average weight 135 pounds. Now 135 pounds. Present illness began August 7, 1913, with a recurrence of the reddened hands, red areas on the cheek and neck, reddened sore tongue, excoriation of the genitals, with redness and discharge. Along with this, patient had diarrhea, and was exceedingly nervous. Did not have any reddening of feet.

Physical Examination.—A tired, nervous-looking

young woman, resting quietly in bed. Pupils equal; react to light and accommodation. Nystagmus, both rotary and lateral present. No contractions of temporal fields. There is a red band about one-half inch wide running across bridge of nose and making a butterfly-like pattern on the cheeks. Red, roughened, scaly areas at the angles of the mouth. Patient drools, lips are dry and parched. Mucous membranes are bright red. Teeth are well preserved, but poorly kept. Tongue is protruded in the median line; has a tremor; is moist and of a very red color. Looks like raw beef. Pharynx reddened. There is a dry, scaly band running around neck. Patient says this was red before. Chest is poorly arched. Movements equal. Vocal resonance; vocal fremitus decreased over left upper lobe. Both apices hyporesonant. A few fine crepitant rales over left apex posteriorly.

Heart.—Precordial maximum impulse not visible. Palpable in fifth space. Area cardiac dullness not increased. Faint systolic murmur at apex, not transmitted.

Arteries.—Radial not thickened, rate 72; regular, full, soft, moderate tension. Blood pressure—Systolic, 140; diastolic, 115. Abdomen is of flat contour. Many striae of pregnancy present. There is pain on deep palpation in both lower quadrants. Liver and spleen not palpable. The dorsal surface of each hand is rough and fiery red; looks sunburned. The erythema extends up the dorsal surface of forearm, to one inch above the elbow, where it ends sharply. The skin over the elbows is dry and cracked and covered with brown scales. The hands are of the arthritic type. The skin over the knuckles is thickened, dry, cracked and covered with brown scales. Epitrochlears are palpable. Labia are fiery red and excoriated. Tendinous reflexes are all very much exaggerated, but equally so. No disturbance to heat, cold, pain or touch sensations. Muscle sense undisturbed. Patient complains of pain in the elbow and knee joints.

Blood.—Red blood corpuscles: Number 3,900,000. Hemoglobin per cent. 78 (Dare). White blood corpuscles: Number 9,500. Differential count.

Polys.	70%
Lymphocytes	20
Large mononuclears	3
Eosinophiles	4
Transitionals	3
	100

Urine.—Appearance, cloudy; color, amber; reaction, alkaline; specific gravity, 1033; albumen, none; sugar, none; microscopical examination: Casts, none seen; crystals, phosphates; epithelium, stratified squamous; leucocytes, very many; red blood cells, none.

Stomach Contents.—Total acidity, 60; free hydrochloric acid, 25; combined hydrochloric acid, 20; organic acids and salts, 15; lactic acid, none; occult blood, none.

Wassermann Test.—Blood negative.

Feces.—During the first two weeks the feces contained ropy and slimy mucus, but no blood or pus. They contained a few vegetable cells, many starch granules, a few muscle fibres and a small amount of fat. They were highly acid in character, contained occult blood, and amebae of the histolytica type were present. The patient was put on Dr. Long's treatment as previously stated, and at the present time mucus has disappeared from the stools, they are alkaline, and amebae are not to be found.

X-Ray pictures of the cervical foramen show no abnormal deposits. Patient has run a low grade temperature, ranging around 100 degrees since her stay in the hospital of four weeks. Her skin lesions have disappeared, with the exception of the roughened hands and forearms. Her physical condition is still weak. Mentally, she has shown marked

improvement. The tendinous reflexes are still very much exaggerated.

While the case does not prove anything definitely, we think the gastrointestinal condition is the base of the trouble, with the amebae as an aggravating factor. It is at least suggestive that with the clearing up of the bowel condition the other symptoms have improved proportionately.

I wish to express thanks to Dr. H. E. Alderson for permission to report the case and to Dr. J. D. Long of the Public Health Service for kindly suggestions in treatment of the case.

BRIEF NOTES ON THE FORMATION AND ORTHOGRAPHY AND PRONUNCIATION OF MEDICAL TERMS.*

By REV. W. H. MILLS, M. A., Cantab.

Mr. President, and members of this society, I have to thank you for the compliment you have paid me in asking me to read a paper at this meeting of your Association, and I have, at the same time, to put in a plea for your indulgence if I fail, as I very likely may fail, to interest you in the subject on which I am to address you. It might be called a literary rather than a scientific or practical subject, and yet it has both scientific and practical aspects.

Some weeks ago Dr. Beason, in the course of an address given by him at one of these meetings, alluded to the fact that, in later life, we often forget, because we don't care to remember them, facts which as medical students we were required to assimilate; and therefore, when some occasion demands a knowledge of those facts, have to relearn them.

I am reminded, in this connection, of an event which occurred at an English university, some forty-seven years ago. The results of an examination for some medical degree—I think it was the first M. B.—had just been published. I was only a freshman at the time, but I knew a good many of the examinees, and one of them, in particular, was an intimate friend of mine. So, when I saw his name in the list of successful candidates, I took occasion to pay him an evening visit of congratulation. I found him alone, but in his room were suggestions of a coming function, such things as bottles of champagne and boxes of cigars. And on his table was a pile of books, the meaning of which I had to learn. Well, I congratulated my friend and then got up to depart, saying that I saw he had a party in view. He wouldn't hear of my going. "You sit down," he said, "and we will teach your young idea how to shoot." Presently four or five more men came in, each bringing a pile of books, which were carefully deposited on the table. Well, we sampled the champagne and the cigars, and talked about things in general, and, in particular, about the examination. After a time there was a hush, broken by one word from our host, "notes." Promptly all the notes, which had been laboriously taken at lectures by those young idiots, went into the fire. Then followed more drinks and a solemn silence. The next was

* Read before the San Bernardino Physicians' Club, May 23, 1913.

"botanies." Into the fire, amid shouts of applause—which made me gather that botany was not a favorite subject—went all the text-books on botany. They were followed, in due course, by manuals on chemistry, and physiology and anatomy, and so on. And the holocaust was consummated by the sacrifice of a copy of "Gray's Anatomy." Now Gray's Anatomy is a costly book, and, in England at any rate, a book for all time. So, when I saw this last offering, I ventured on a mild remonstrance. But the owner, though next day he deeply regretted his act, was beyond reach of argument. The sacrifice was completed.

Now that may seem a childish story, but it illustrates, I think, the temper which moves some medical students—in my time it moved many medical students—to acquire just such an amount of knowledge as shall enable them to rout the examiners, and then to celebrate their victory by banishing that acquired knowledge as quickly as possible from their minds. It may perhaps stir sympathetic chords in some souls here to-night.

One advantage, among the many advantages of these meetings, is, as it seems to me, that the papers read at them, and the discussions which follow, help us to revive memories of what we learned years ago in medical schools and in hospitals, and have more or less forgotten. I speak especially for myself, for my rustiness in such matters often appals me. But I take it that others also—men who are so busily engaged in practical work that they have little time for reading—find themselves at times more or less rusty in respect of some of the foundation truths on which the science of medicine is based. I don't propose to parade my own rustiness in respect of such matters. The object of my paper to-night is to revive memories of studies which preceded our medical studies, and, in particular, the study of what are called "*Litterae humaniores*"—the classical languages and arts.

I take it that the reason why our medical vocabulary borrows most of its terms from the Greek and Latin languages, is that these languages are a sort of Volapuk or Esperanto—a language which can be understood by educated men of all nations, no matter what their national speech may be. So, too, in mediaeval times, the language of the Law Courts was Latin. There has also, perhaps, been the idea that things medical should not be carelessly exhibited to the laity—an idea based, not so much on pharisaic notions of self-interest, as on a laudable desire to safeguard ignorant folk against an improper use of drugs and methods of healing.

Now, if the terms of our medical vocabulary are to be a true Volapuk—a true *Lingua Franca*—it follows that they ought strictly to be properly compounded words, and further, that they ought to be properly spelt and properly pronounced.

Let us take, first, the question of word-formation. It is a big subject, and I can only skirt it; for to go into its details would take not merely hours but days and weeks. But something may be said about it.

In a letter to the London Spectator, a few weeks ago, the writer, very properly objecting to such words as "pacifist" and "pacifist" as substitutes for "peacemaker," was unwise enough to suggest, as a better term, "paxamist"—a word which, though, to my amazement, it was commended by the Editor, is not merely a mongrel but also a monster. That letter, however, was not wasted. It called forth a protest from a philologist, who laid down three rudimentary rules for word-formation. "In coining new words," he said, "some regard should be paid to the following principles":

(1) The idea, which the new word is intended to express, should be truly connoted in its constitution.

(2) Languages, like liquors, should not be mixed.

(3) The ordinary rules of grammar should be observed; and, if possible, the result should be euphonious.

These rules are at once very simple and very useful and they go a long way. But I may add one more.

(4) In a compound word, made up of two nouns, the union of the nouns may not be interrupted by a preposition. Thus such a word as oothেকেktomy is wrongly formed:—Ovariectomy, by the way, violates rule 2; it is a mongrel, though some late Latin authors have coined a Latin *tōmē* from the Greek *Tōuy*. Now, when wrongly formed words have grown into inveterate use, it is very difficult, if not impossible, to alter them; the malformations have mostly to be endured. But, when the question is of recent words, or words as it were in the birth, it is surely most desirable that the rules of word-formation should be rigidly observed: that new words should be constructed on strict etymological lines; that recent malformations should be corrected; that wrongly formed words, claiming acceptance, should be rejected.

I can't help referring here to certain terms, used by outsiders who apparently want to find some substitute for the title "Dr."—such terms as oxy-path, osteopath, naturopath. Now "oxypath" does not violate the rules of word-formation. But what does it mean? It means, as applied to a man, one who suffers sharply. One is tempted to think that a man, who takes this title, should be made to live up to it. Or, if you take a modified meaning, an oxypath is a man who is keenly sensitive. Now all doctors are in sympathy with their patients, and sorry for their troubles. But what is to be said of a man who parades this sensitiveness as a sort of advertisement—as a claim that patients should flock to him as assured of his sympathy with them? He should at any rate, I think, be compelled to treat his patients gratuitously. I don't know what an "osteopath" is, because I don't know what it is to suffer bones, or from bones—unless there is an allusion in this name to the time-honoured excuse, given by nursemaids who don't want to get up and run about with the children under their charge—"I have got a bone in my leg"; or unless there is an implied suggestion that the osteopath suffers from some bone-disease. There is this to

be said for these two words, oxypath and osteopath, that they are not mongrels. But among all the mongrel words that I have seen, I never saw a worse mongrel than naturopath. And what does it mean? Well, as I think Artemus Ward once said, "We all of us have a good deal of human nature in us," and human nature has bad, as well as good, aspects. "Suffer" seems to imply a bad aspect of human nature, and so the title "naturopath" might not unfairly be interpreted as equivalent to a notice—"keep out" or "Beware of the goat."

But—to get back to terms used by the medical profession—such a word as appendectomy is ruled out, not only by rule 4, but also by rule 2. I am not altogether persuaded that rule 4 should be strictly enforced. It is certainly strict *law*, but it is often disregarded, as Dr. Stedman has pointed out, in these days even at Athens—disregarded, i. e., at the chief Greek medical school of our time. But, supposing that we pull appendectomy through rule 4, we can't pull it through rule 2. For it is a mongrel, made up of the Latin word "appendix" and the Greek word *ektome*. Some a word as *skolekoidektomy*, suggested (with a difference in the spelling) by Dr. Stedman, though it offends against rule 4, would observe rule 2; the word is not a mongrel. Or perhaps *appendexcisio*, though it too violates rule 4, might serve. Again "gastro-enterostomy," though not a mongrel, has a false termination, as the word "anastomosis" may remind us—though, as a matter of fact, if we took stomosis into partnership with the other two words, we should have to change the final—*is* into—*ia*; and coin the word—it is rather a mouthful—*gastro-entero-stomia*. Another word that offends is "adiposis," a word made out of the Latin *adeps* and a Greek termination (*-ōsis*) tacked on to it. It is a mongrel. Such words as *gastrektomia*, *husterektomia*, *nephrektomia*, etc., though they violate rule 4, seem to claim acceptance on the ground of their convenience, and are, as a matter of fact, accepted by modern Greeks. And they do not cloak their meaning, as "gastro-enterostomy" in a measure does. "Sanitarium" may stand side by side with "pantorium." Speaking generally, I think that, monstrosities, which are rare, excluded, mongrel words are the most objectionable; and that, even when they have grown into use, an effort should be made to abolish them.

Next comes—perhaps it ought to have come first—the question of orthography. There seems to be a desire in these days to simplify spelling by eliminating diphthongs, especially *æ* and *œ*. Thus we write *equal*, *era*, *eternal*, *economy*, *estuary*, etc. That is, in a measure, allowable in the case of words used in ordinary speech. But is it allowable in the case of our medical Volapuk? "Any moderately educated Greek, or even Latin scholar," says a writer in the *Lancet*, "should be able to gather at first glance the meaning of 'anæmia,' but 'anemia' might suggest to international readers 'windiness'; and in the same way, 'pediatrics' might suggest the 'therapeutics of the feet.'" That is clearly true, and therefore, as it seems to me,

diphthongs should surely be retained; and any simplifications of spelling, which obscure the derivation of words, should surely be rejected.

And now I come to the subject on which I was originally asked to address you, the pronunciation of medical terms. It is a dependent subject, and therefore, I have taken it last. Here of course comes in a question as to the right pronunciation of Greek and Latin words. For some years in England, and, I imagine, here, an effort has been made to return to the original pronunciation of Latin words; and, what is called "the new pronunciation"—which is really the older pronunciation—is commonly taught in our schools and universities. In this "new" pronunciation, the vowels are pronounced pretty much as they are on the continent, and that is undoubtedly a great gain. Thus the termination *-itis*, is pronounced, as I believe it is here, "eetees." As for consonants, to mention three of them: *c* and *g* are always made hard—as they were in classical times—even before *e* and *i*, and *v* is pronounced as *w*—again in accordance with classical usage. Thus the Latin word for a citizen, which in my young days was pronounced "sivis," is now pronounced "Keewees."

That brings to my mind another story—a story of what was said to have happened some 25 years ago in England. Two young professors went down from Cambridge to examine the girls' college at Hatfield. In the course of the examination, the subject at the moment being the pronunciation of Latin words, one of those young examiners asked if any girl could give him the proper pronunciation, and the meaning, of the word spelt *vicissim*, and pronounced, before the reform came in, *visissim*. Thereupon the whole school arose as one girl, and quite correctly, but blushing, replied—"wee-kis-im, by turns." That was the examiners' story, when they got back to Cambridge. But, in justice to those girls, I ought to add that, after sticking to their story for some weeks, those romancers confessed that they had made it up on their return journey. Again the story may appear childish, but it carries in it a sort of *memoria technica*—useful in its way.

I don't think that this reformed pronunciation has affected, to anything like its full extent, the pronunciation in England of medical terms, so far as consonants are concerned. One doesn't hear "woolwa" for vulva, or "kell" for cell, or germ (with a hard *g*) for germ, though one does hear "bakillus" rather than "basillus," and "leukocyte" rather than "leucocyte." And, so far as the consonants are concerned, the reformed sounds of *c*, and *g* and *v* would hardly help matters, for those changed sounds don't obtain on the continent. But, whether the old pronunciation or the new (i. e., the older) pronunciation is used, the *quantity* of vowels, whether in England or on the continent, is *never changed*. A long vowel is considered, and made, as long now as it was in the days of Cicero, whom I ought, I suppose, according to purists, to call "Kikero." That Kikero—pronunciation, by the way, suggests again that, where words derived from the classical languages have

been thoroughly Anglicised by the usage of centuries, it would be mere pedantry to change them, at any rate in ordinary speech; e. g., "medicīnal" ought strictly to be pronounced "medicīnal." But who would wish to have it so pronounced? Who would willingly call Virgil "Waregeel," or Caesar "Kasar," though the Germans rather have us there? But medical speech is not common, or conversational, speech. It is technical, international speech. It should make medical words as readily understood by all nations when spoken as when written. Therefore, putting aside the classical pronunciations of c, and g and v, as not now international, the continental pronunciation of vowels and consonants should be followed; and, whether that pronunciation is followed or not, the *right quantities of vowels* should always be observed.

I beguiled certain hours on my voyage from Liverpool to Galveston by drawing up a list of false quantities often heard in England, being incited thereunto by a fellow passenger, a Scotch doctor, whose retentive memory embraced many such mispronunciations, and I have added some more examples which have come to my ears here. The list is a very imperfect one, but it may serve as a sample list.

Pituitary for pituitary; umbilicus for umbilicus; diabetes mellitus for diabetes mellitus; abdomen for abdomen; intestinal for intestinal; angina for angina; duodenal for duodenal; tibia for tibia; vertigo for vertigo; vaginal for vaginal; sequela for sequela; refluxent for refluxent; "jinnycology" for gynaecology; cervical for cervical; paresis for paresis; trachea for trachea; ileum for ileum; respiratory for respiratory; neurasthenia for neurasthenia; conium for conium—by the way, if Socrates had heard Koneion thus mispronounced, he might have refused to drink his final draught, on the ground that the Law could not compel him to swallow a pine cone; "chiropody" (ch. as in cheese) for "keiropody"; "sinnymattograph" for "kinemattograph"; syncöpe (to rhyme with hope) for syncöpe.

To these words I may add three, in which America corrects our English pronunciation: Skedule for shedule; théâtre (though the word is wrongly spelt theater) for théâtre; and apparently (though here our English pronunciation is also heard) wounds, as wownds, for woonds.

Teesis, if p is pronounced before the t—a matter on which I am uncertain—corrects our English phthisis. Without a p it recalls to my memory the tizzis and tizzical, which were used in England 100 years ago, and were perhaps brought over by the Pilgrim Fathers.

Well, that ends my list, and it must end my paper too. I must apologize for certain frivolities which have crept into my paper—frivolities which may perhaps be excused by the weather, which, in my case, makes hard thinking a hard job. For I am not yet fully acclimatized—I beg pardon, acclimated—to the weather conditions (though I enjoy them with all my heart) of the great Pacific Coast, and in particular, of Southern California.

ARTIFICIAL SYNOSTOSIS OF THE TUBERCULOUS SPINE.*

By JAMES T. WATKINS, M. D., San Francisco.

I ask you to ponder these four texts which I quote verbatim from the classics of orthopedic literature.

Bradford and Lovett's Text Book, 1911 edition, "On the Nature of Potts Disease": "It will always be regarded as one of the most formidable of diseases, its long course, the deformity entailed, the severity of the complications and the occasional termination in death give both to the surgeon and to the non-professional public a natural dread of the affection."

Henry Ling Taylor's Hand Book on "The Duration of the Disease": "The disease is rarely cured in two years, and then only in the cervical spine. In other regions spinal support for four to five years, or more, is necessary. The course in untreated cases is very long—from five to twenty years."

Painter (Goldthwaite, Painter and Osgood): "Diseases of Bones and Joints" on the malignancy of Spinal tuberculosis.

It tends to recur after an apparent cure in a considerable proportion of cases—the average quiescence of cases being 12½ years.

Wullstein, Joachimsthal's Handbuch. "Most authors agree that after the 40th year of life a cure is no longer to be expected."

Ely's studies of the pathology of tuberculosis of bones and joints would seem to have determined that the disease appears in those portions of bones which contain lymphoid tissue and in the synovia. This lymphoid tissue, or red marrow, is present in the bodies of the vertebrae and in the ends of the long bones. It is not present in the vertebral laminae nor spines, neither is it found in the shafts of the long bones; nor does tuberculosis primarily attack these structures. It has further been remarked that when, from any cause, such as immobilization of a joint, function has been prohibited for a sufficiently protracted interval, or, still better, when through an erosion of the ends of contiguous bones, function has actually been destroyed, these synovial and lymphoid tissues undergo modification into the less highly organized fibrous connective tissues.

The fibrous connective tissues are immune to tuberculosis. Consequently if tuberculosis has been present in or about a joint it will rapidly disappear once that joint has been artificially ankylosed; the one exception to this rule occurring when these tissues have been rendered temporarily vulnerable to tuberculosis by the presence of secondary pyogenic infection.

Turning now to a consideration of tuberculosis of the spine, much information may be gathered from Brackett's studies of the manner in which healing occurs in the various types of spinal tuberculosis and after varying degrees of deformity.

In cases where there has occurred extensive destruction of bone, and particularly of the anterior portions of the vertebral bodies, with consequent fusion of them and angular deformity, a large

* Read before the Forty-third Annual Meeting of the Medical Society, State of California, Oakland, April, 1913.

wedge of new bone may be thrown out in the angle of the deformity thus opposing an increase of the latter and enlarging the bearing surfaces of the opposed vertebrae. In other instances in place of a solid wedge of new bone, buttress-like bridges span the angle made by the bend in the spine.

Where there has been less destruction of bone and less consequent distortion, healing may take place in one of two ways. Either new bone is thrown out on the anterior and lateral aspects of the bodies of the diseased vertebrae, thus fusing them and broadening their surfaces of contact, or—there may occur a fusing together of all the laminae and spinous processes of the diseased vertebrae. And this fusion takes place despite the fact that the spinous processes and laminae may not have been involved in the tuberculous process. Such a fusion when it occurs must prevent all motion in the segment of the spine involved.

Except in those rare instances which present an almost immediate arrest of the pathological process (and which it would perhaps be safest to class as mistakes of diagnosis) prevention of deformity while healing is taking place in either of the last named ways, may be said to be the purpose of conservative orthopedic treatment. But while healing without apparent distortion can and does occur, to quote Wullstein again, "Deformity to a variable degree is the rule."

I will not detain you now with a discussion of the varied means, the special beds, the jackets, corsets, cuirasses, braces and the like, which we have employed in the past in the effort to arrive at our end. They were all devised in the effort to apply the two fundamental principles which lie at the basis of treatment, i. e., immobilization and relief from pressure. Because of mechanical obstacles, their success was comparative. As a matter of fact neither absolute fixation nor complete removal of weight bearing (except in recumbency) was by these means attainable.

To-day we enter upon what I firmly believe will prove to be a new era in the treatment of spinal tuberculosis. It is my privilege to direct your attention to a procedure which, while it is new with us, has been tested for two years by our colleagues in the East, a procedure which promises to cut short the orthopedic treatment from years to months, a procedure which if successful must prevent the increase of deformity and incidentally improve the cosmetics of the distortion present, a procedure which enables us to replace the inaccurate, ill-adjustable, inefficient, easily broken, oftentimes insanitary, and always irksome external splints and braces of the past, by a self adjusting, always working, absolutely immobilizing, internal or osseous splint, which grows with our patient's growth, which strengthens with his strength, and which represents in itself the result of stimulating and marshaling into a sustained effort those forces which nature had manifested in her blind gropings toward a cure.

This internal or osseous spinal brace is obtained by causing a synostosis (or artificial ankylosis) of the posterior portions of the diseased vertebrae and of the healthy ones next above and next below them.

It may be accomplished either by Hibbs' operation or by that of Albee. There is some question of originality affecting these operations as well as of priority in the field. This fortunately does not interest us any more than do insignificant modifications of them put forward as original work elsewhere. As a matter of fact if time shows the principle upon which they are based to be surgically and pathologically sound there will be credit enough for everybody.

Briefly Dr. Hibbs' procedure is as follows: Through a posterior median incision the spinous processes of the diseased vertebrae as well as those of the two healthy vertebrae next above and the two healthy ones next below them are uncovered. Their tips are denuded of cartilage and the periosteum reflected outward on each side as far as the transverse processes. The interspinous ligaments and the ligamenta subflava are partly dissected out and the rest thrust forward on the ventral surfaces of the laminae. Then a series of interosseous bridges are created at either side by partially chiseling off pieces from the laminae and turning the free ends of these pieces down to rest on the upper parts of the laminae next below.

Next the upper two-thirds of the base of each spinous process is cut through and the remaining portion fractured green stick-wise. The spine is then bent down so that the denuded tip may be inserted into the cleft at the base of the spinous process next below.

Finally the periosteal sheets at either side are brought together in the middle line over this osseous mosaic and sutured with 30 day chromic gut. The skin is sutured with horse hair and the patient put back to bed on his stretcher. Hibbs at once applies a spinal brace with the uprights somewhat farther apart than usual.

The patients are kept recumbent for 8 weeks and then allowed up, wearing one or other protective appliance. I might add that whereas we employ a jacket in the after treatment Hibbs requires his patients to wear a spinal brace for some time after they are up and about.

Dr. Albee uncovers the same number of spines through an identical incision and then chisels in them a shallow longitudinal groove a bit to one side of the middle line. Into this groove he introduces a bone graft chiseled from the crest of the tibia. This graft has its periosteum intact and is excised in such a way as to include some of the marrow. The graft is fixed in its new bed by linen sutures. We use sutures of chromic gut. The wounds are then closed in the usual way and the patient put to bed. The next day he is placed upon a Bradford frame to remain there eight weeks.

Orthopedic surgeons in the East seem to be about equally divided in their opinions regarding the relative excellence of these two operations. Dr. Lovett, for example, is said to consider Dr. Hibbs' method to be scientifically the more correct.

On the other hand the ingenious Dr. Ansel Cooke of Hartford thinks that, to use his own words, "Albee has it on Hibbs."

Here in San Francisco Dr. Sherman considers

Dr. Albee's to be the more surgical procedure, whereas in the light of Macewan's researches, I have seemed to see at least theoretical grounds for favoring Dr. Hibbs' method. The Boston men employ the Hibbs operation in the thoracic segment and the Albee operation in the lumbar spine. We have done the same thing, and as a matter of fact as far as our present day observation goes the results of each operation when properly performed are gratifying in the highest degree. There is no hemorrhage, beyond some venous oozing. We have never yet tied a vessel. And those of you who have timed our later operations done under familiar surroundings upon children have advised me that each operation from incision to final dressings had occupied but thirty minutes.

Of course it is too soon, and will be for perhaps another decade, to speak finally of the results from these operations. Their success will not depend however upon the view here entertained of the pathology of bone tuberculosis. Even should we have to rewrite our pathology, the internal splint must remain mechanically a vast improvement over the external splint and where it does fail, the fault must, it seems to me, be sought in the technic of the operator, and not in the surgical principles involved.

The more I study this question the firmer does my conviction become that we are in the presence of one of the greatest advances in bone surgery. I do not see how the principle upon which it is based can fail unless we are prepared at the same time not only to place an entirely different interpretation upon the observed phenomena of osseous repair, but also to deny Wolff's laws for the transformation of bone, and finally to renounce utterly our present views of osseous growth; views based for the most part upon Macewan's clinical studies of thirty years, verified by countless animal experiments and enunciation by him in that wonderful book "The Growth of Bone".

Personally I do not expect ever to be called upon to make these renunciations.

History of a Case and Stenographic Report of an Operation for Stiffening the Tuberculous Spine, Performed by Dr. James T. Watkins, Before Members of the California State Medical Association at Stanford University Medical School, April 19th, 1913.

Before considering the status of the patient upon whom I shall presently operate I desire particularly to express my thanks to the dean and faculty of Stanford University Medical School to whose courtesy I am indebted for this opportunity to appear before you here.

I shall not enter into a discussion of the indications for this operation now. I did all that in my paper before the State Society on Wednesday. While I am operating, the X-ray of this patient's spine will be handed about among you. You will observe a pear shaped shadow overlapping the 10th and 11th thoracic vertebral bodies. It indicates a tuberculous abscess, which because of its density, is I should say pretty completely calcified by this time.

Briefly her history is as follows: R. L., age 42. Profession, cutter of women's underwear.

Family History—Father died of heart disease, mother living, brother said to have pulmonary tuberculosis.

Past History—Uneventful until 18 years old when she had nervous prostration one winter. Attributes

it to overwork. Was absolutely well until two and a half years ago.

Present History—Her present trouble began two years ago last January, that is January 1911, with throbbing in her back which came on every night not long after retiring and continued for two hours when it would cease not to recur again until the next night. She says it was like a "jumping toothache." In July of that year she had jaundice and was sick for three weeks. At this time she felt a great deal of pain in her back; some doctors said she had rheumatism.

Lurline baths and massage were prescribed. At the Lurline baths the rubber noticed a prominence at one part of her spine. Beginning with January 1912, she was given electricity to her spine (galvanism) for two and one-half months. At this time her whole back became so sensitive that she could not pull her bed covers over her chest nor turn a water faucet with either hand. Late in March an X-ray was made of her spine. The diagnosis then was, she says, of a spinal tumor. About this time she was referred to me. She was then scarcely able to walk, could not bend her body in any direction except at the hips, could not lift either foot to place it upon a stool because of muscular spasticity. When she got down on her knees could only with the greatest difficulty get up again; presented tremendously exaggerated knee jerks and ankle clonus.

Physical examination showed a distinct kyphos with its apex at about the 10th thoracic vertebra. She had been in constant pain day and night for several months. She was said to have lost a great deal of flesh and strength, to have no appetite, to have night sweats, and thought she had had some evening fever.

Treatment. On April 3d a plaster of paris jacket was applied in suspension which grasped her pelvis just above the trochanters and extended upward to support the chin and occiput. Wearing this jacket the patient was recumbent for six months. At the end of that time her general condition had improved, her appetite was better, her sweats had disappeared, her pain recurred only at intervals.

September 15, 1912, the jacket was removed and she was placed upon a curved stretcher reinforced by two parallel longitudinal pads of folded newspaper an inch apart permitting the spinous processes to project downward between them.

April 15, 1913. She has been seven months on the stretcher, or over 12 months recumbent altogether. Her general health is very much improved, though she is still exceedingly thin. For many months she has had no pain at all but she still does not show that anxiety to get up which is manifested by persons in whom the process is rapidly healing. Also it is apparent that despite persistent recumbency her kyphos has increased in size. Evidently then the most efficient form of treatment known to us heretofore has in almost thirteen months relieved her subjective symptoms only, and from what we know of the results of treatment in countless other cases must be persisted in for three to five years more before we can even hope to obtain a cure. Since she is over the age limit—40 years—it is doubtful whether we could by these methods obtain a cure at all. Thanks to this new operation we are not without hope, however.

Now what we aim to do here is to create an internal or osseous splint which will actually and completely immobilize the diseased portion of the spine. We believe that if we can do this, changes will occur in the structure of the vertebral bodies and that as a consequence of these changes they will no longer be vulnerable to tuberculosis.

What makes us think that we can create such a splint by operative means is our knowledge of the nature of the growth and repair of bone; knowledge for which we are indebted to the studies of Sir William Macewan. I think that no one who occupies himself with bone surgery can afford to

be without Sir William's book "The Growth of Bone." I have read it not once but many times—and they were not enough.

No tissue responds more readily to stimulation than osseous tissue. Under the influence of appropriate stimuli the cells in the interior proliferate, enter the Haversian canals, and appear in the comparatively loose areola tissue beneath the periosteum. Here they find room to expand and undergo further proliferation. These are the osteoblasts. It is their special province to cause a deposition of lime salts on all sides of them.

Again it has conclusively been shown that small diaphyseal grafts when placed under favorable conditions proliferate from all sides. That is, each of them becomes an independent center of ossification. The special application of this observation will appear directly.

Until lately the function of the periosteum was misunderstood. It is now known that it has not, as was formerly supposed, a marked osteogenetic function. Its main purpose is to act as a limiting membrane to the osteoblasts issuing from the Haversian canals. Blood vessels and nerves from it enter the Haversian canals and help nourish the bone, which, however, gets its main blood supply from the nutrient artery.

In view of these observations we propose to perform the following operation (a) We will strip the periosteum back from the spinous processes and laminae as far as the transverse processes for a space including the vertebrae forming the kyphos and the two healthy vertebrae above and the two below it. (b) We will then partially separate strips of bone from the lower borders of the laminae and displace their free ends downward to form osseous bridges connecting each lamina with the lamina below it. (c) We will then make a green stick fracture of each spinous process, after severing the upper half of its base, and will then introduce its apex into the cleft in the base of the spine next below it. (d) Finally we will draw the two laterally displaced layers of periosteum and overlying muscles together over the bones in their newly made relations and stitch them tightly together, creating a sort of periosteal tube or sheath.

If we perform these steps properly we may, in the light of what we already know, expect that stripping back the periosteum has both stimulated the production of osteoblasts and made room for their further proliferation and development, while the plastic work on the inter-laminal bridges and spinous processes has created just so many fresh centers of ossification; the ossific process being limited and given definite shape by the new arrangement of the periosteum. As a consequence, by the time an ordinary fracture would have united our patient should have developed a strong bony splint supporting and immobilizing the kyphos and extending two vertebrae above and two below the diseased area.

I may add that a child under our care upon whom this operation was done is now dying of a general miliary tuberculosis. This general condition had begun to manifest itself just before we operated.

I shall hope to be able to present the specimen from his spine to the State Society next year.

If you will kindly bring in the patient we will begin our operation.

You will wonder why we use these funereal lined coverings. We use black sterile sheets to cover the patient so that the field of operation may be brought out into bolder relief by contrast. It is particularly valuable where we use iodine to render aseptic our operation field. I am told there are optical reasons for preferring green sheets to black and expect to experiment with that color later.

To minimize hemorrhage it is necessary to make our incision in the middle line exactly down to the spinous processes. But the skin and subjacent tissues play back and forth over the spines making a straight incision difficult of accomplishment. However, by placing a hand palm down in this

way on the back at each side of the spine and retracting away from it you see we get pretty fair fixation and are able to make our incision down to and in fact into the tips of the spinous processes.

The Boston men instead of our straight median incision employ a semi-elliptical skin incision. When they have dissected this back they make the usual median cut through the subjacent structures.

We employ this skin flap in executing the Albee operation. The practical point to bear in mind in making it is that only the skin must be included in the flap. If you cut through the fascia you will have annoying hemorrhage.

We have now completed our incision. Next with sharp Collin periosteal knife we separate the periosteum first from the tips of the spinous processes and then strip it up and out as far as the transverse processes. The intervals between the processes we clip through with the Mayo scissors.

Dr. McChesney lately returned from the East where he saw both Doctors Hibbs and Albee perform their operations. I recall Dr. McChesney's telling me that Dr. Hibbs said he was as careful in his treatment of the periosteum as he would be in performing the toilet of the peritoneum. Do I quote you correctly, Doctor?

Dr. McChesney: "Yes, that is exactly what Hibbs said."

Dr. Rixford: "What did he mean by that?"

Dr. Watkins: "Merely, I take it, that he tried hard to get it off with as little shredding as possible."

We have finished one side and pack it with gauze to stop oozing, while we do the other. Doctor McChesney did the first of these operations which I have seen. In all we have done fourteen. This is the fifteenth. We have gradually cut down our time of operating from an hour till this morning Doctor Sherman and Dr. McChesney did one in twenty-five minutes. With every case one learns something. You will observe how much more easily I am peeling off the periosteum and muscle insertions on this side by working from below upward than I was able to do on the other side where I did not specifically work in a given direction. In children denudation is easier. The periosteum is thicker. The ends of the spines are covered with cartilage which peels off easily, and the muscle attachments are insignificant.

Dr. Rixford: "What are you going to do with the inter-spinous ligaments? I ask for information."

Dr. Watkins: "Dissect them out as carefully as possible."

We will also free the ligamenta sub flava and push them forward on the ventral surfaces of the laminae.

I think we have our periosteum peeled off sufficiently. Let us pack that side too. If you will give me a knife I will dissect out the interspinous ligaments.

Dr. Rixford to the Nurse: "Give Dr. Watkins my big cartilage knife. Try that, Doctor."

Dr. Watkins: "Thank you, this is fine. Dr. Hibbs lays particular stress upon the importance of completely clearing away these ligaments. See here these cartilaginous interspinous masses. They represent nature's way of beginning a cure. In time they would ossify, but it would be a matter of years."

Dr. McChesney: "Look out you don't get down too deep."

Dr. Watkins: "I will. However, we have opened the spinal canal more than once in performing this operation—but without ill effect."

Now we are through with that.

Now with the special chisel we chisel free strips of bone from the lower borders of our laminae and bend them downward so that they bridge the interval between these laminae and the laminae next below them.

Now with these Hibbs forceps I snip off the tips

of the spines. Now beginning at the bottom of the wound I bite through the upper half of the base of each spinous process, and without removing the forceps use them as a lever in fracturing the process through its base. It is then bent downward. Each process in succession is treated in like manner and its apex introduced into the cleft in the base of the process next below. So much for the bones.

I shall now bring the two lateral sheets of periosteum and muscle over and suture them together in the middle line using chromic gut No. 1 to make a continuous buttonhole suture. We next close the skin with horse hair. Flat sterile dressings. Did you touch the line of suture with iodine, Nurse?

Nurse: "Yes, Dr. Watkins."

Dr. Watkins: "Cover the wound and wash her back off with alcohol. She can go back on her curved stretcher."

How much time did we take?

Dr. Katherine Palmer, anesthetist: "The actual time of operation was twenty-five minutes."

RECENT ADVANCES IN THE TREATMENT OF DACRYOSTENOSIS.*

By LOUIS D. GREEN, M. D., San Francisco.

Operative procedures for the relief of dacryocystitis, by making an artificial communication between the tear duct and the nose, date back to the time of Galen and Celsus, but it is only in recent years that any real progress has been made in this direction.

Probing and slitting the duct and canaliculus, while curative in some cases, usually results in failure besides necessitating a painful and prolonged course of treatment. Extirpation of the sac, though more frequently successful, is also undesirable in that it interferes with or destroys the physiological function of the lacrimal apparatus, often failing to abolish the epiphora and therefore frequently demanding a partial or complete removal of the lacrimal gland, and finally is apt to leave a scar in a rather conspicuous place.

Caldwell in 1893, Killian in 1899, and Passow in 1901 attempted to produce free drainage by opening up the duct through the nose but at the expense of the anterior end of the inferior turbinate. While this was a step in the right direction it did not prove entirely satisfactory. This operation not only destroys part of a very important organ, but often fails to reach the seat of trouble, as the stenosis is usually at the junction of the sac and duct, a point higher than that reached by this method.

Toti, in 1894, attempted to obtain the desired end by making a skin incision over the region of the sac and then producing a communication with the nose, but got good results in one half of his cases only.

In 1910, West published a method by which he made an opening from the duct into the nose without sacrificing the anterior end of the inferior turbinate. This likewise has proven unsatisfactory in that the stenosis is usually situated

above this point, and he had to reoperate in about half of his cases. Since then he has entirely discarded this method and now makes the opening directly into the sac. He reports over 100 cases with 90% good results.

Of all the methods so far devised, that described by Bryan and the latest procedure of West, with some slight modifications, are the most rational and have so far proven the most satisfactory. They have the advantage of producing permanent free drainage into the nose above the

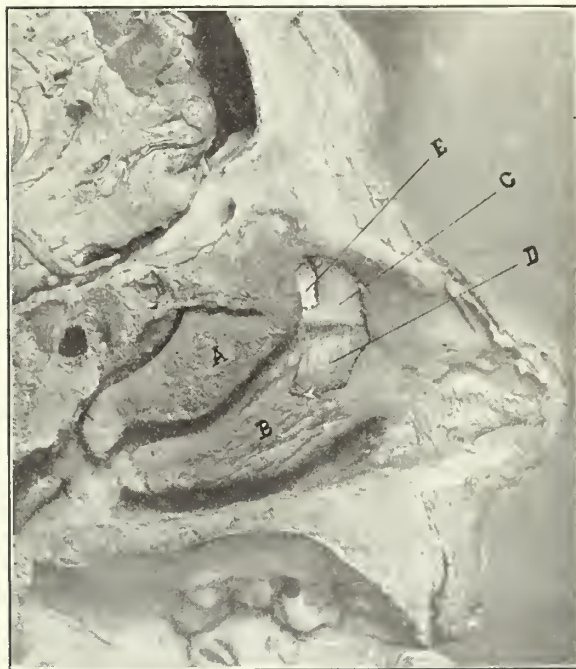


Fig. 1. (A) Middle turbinate. (B) Inferior turbinate. (C) Lateral bony nasal wall. (D) Muco-periosteal flap turned down over inferior turbinate. (E) Lacrimal sac.

point of stenosis and without destroying any important tissues. Epiphora, dacryocystitis, dacryoblenorrhea, phlegmon, and fistula have all been successfully treated in this way.

Technique—After making measurements on the living as well as on a large number of cadavers and skulls, the writer finds that the following anatomical landmarks will greatly assist the operator in locating the field of operation. The nasal process of the superior maxillary bone and lacrimal bone form the fossa for the lacrimal sac and a point, one quarter inch below the attachment of the middle turbinate to the lateral wall of the nose and on line with its anterior extremity, will about locate the middle of the lacrimal fossa. Just anterior to this is a slight elevation which becomes more conspicuous when the mucous membrane is raised. It is not always marked, though present in most cases.

Under cocain and adrenalin anesthesia the mucous membrane and periosteum of this area are raised in the form of a somewhat quadrilateral flap with its attachment below and turned down over the inferior turbinate. This will expose the bony nasal wall of the lacrimal fossa. With appropriate chisels or burrs the bone is removed till the sac with its membranous

* Read before the San Francisco County Medical Society. Eye, Ear, Nose and Throat Section, August 26, 1913.

attachments is clearly exposed. This is firmly grasped with forceps and a piece from its nasal wall excised. If pus is present, it will immediately exude through this opening into the nose. Care must be taken that the opening is made large enough as otherwise granulation tissue will form and close it up. Before the mucous membrane is replaced in position, a piece of the flap, at its postero-superior angle is excised so as not to occlude the opening into the sac. The nose is then packed



Fig. II. Lacrimal sac (diagrammatic), dotted line showing part of sac excised.

with gauze which is left in place till the following day when it is removed.

With a lacrimal syringe introduced into the



Fig. III. (A) Flap replaced in position with its postero-superior border excised and showing opening into sac.

canaliculus, the sac is irrigated daily until healing is complete when it will be found that a permanent opening exists and the condition cured.

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SOCIETY REPORT

BUTTE COUNTY.

The regular monthly meeting of Butte County Medical Society was held Tuesday, December 9th, at 8 p. m. at the office of Dr. Gatchell at Chico. President, Dr. P. L. Hamilton, in chair. Members present: Drs. Baumeister, Browning, Enloe, Hamilton, O. Stansbury, M. P. Stansbury of Hamilton City, E. F. Gatchell of Chico, Dr. Cornell of Stirling City and Dr. Charles Landis of Chico.

The following officers were elected for 1914: Dr. Edward Baumeister, President; Dr. M. P. Stansbury of Hamilton City, Vice-President; Dr. Ella F. Gatchell, Secretary-Treasurer; Dr. O. Stansbury of Chico and Dr. J. H. M. Karsner of Oroville on Board of Censors. Dr. Charles Landis was elected to membership.

The meeting was devoted entirely to business and plans for the ensuing year whereby the interest of the members might be aroused and the meetings made a benefit to all.

ELLA F. GATCHELL, Secretary.

CALIFORNIA ACADEMY OF MEDICINE.

The regular meeting of the Academy was held in the Library of the San Francisco County Medical Society on the evening of October 27th, when the following program was given:

The Large Personal Factor in Blood Pressure Determinations by the Oscillatory Method. E. S. Kilgore. Discussed by H. W. Gibbons and H. L. Whitney.

At the regular meeting of the Academy, held on November 24, a paper entitled "The Economic Value of a Life" was read by James L. Whitney and discussed by P. K. Brown.

FRESNO COUNTY.

At the October meeting of the Fresno County Medical Society a very cordial invitation for the Society to meet with the medical profession of Hanford in November was extended by Dr. Charles Rosson, an affiliated member of the Fresno Society. This invitation having been gratefully accepted on the evening of November 4 about fifteen Fresno medicos took automobiles to Hanford, thirty-three miles distant, reaching there about 8 p. m.

The meeting was held at the residence of Dr. Rosson, with enough Hanford physicians present besides the Fresno contingent to total about thirty-five. Several new members were added to the Society, causing Dr. Aiken to remark that he regretted these names were not being enrolled in an active prosperous Kings County Medical Society instead of that of Fresno. This meeting was intended to be largely social, complimentary to the Fresno Society, and was so conducted.

Some very amusing and instructive personal experiences were related, wholesome truths not a few. Dr. Rosson, Sr., of Tulare gave a very interesting account of his early surgical experiences, some of the results of which, would do credit to

our most distinguished surgeons of today. A most sumptuous banquet was served accompanied with "grape juice" where good cheer and the most cordial professional fellowship prevailed, until 11:30, when the meeting adjourned with a rising vote of thanks to Dr. Rosson for having made possible such an enjoyable and profitable meeting.

G. H. A.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of October, 1913, the following meetings were held:

Section on Medicine, Tuesday, October 7th.

1. A bed seat to be used in conjunction with a back rest, and devised to prevent patients who are required to sit up, from sliding down in bed. J. T. Watkins.

2. Indications for Vaccine Therapy. E. C. Dickson.

3. Prophylactic and Therapeutic Use of Vaccines in Typhoid Fever. F. P. Gay. Discussed by R. Brooke, E. S. Kilgore, G. E. Ebright, O. Zaichack and A. B. Spalding.

General Meeting, Tuesday, October 14th.

1. Demonstration of the end results of an operation performed for the correction of multiple deformities following an infectious arthritis of the joints of the foot and of the toes. J. T. Watkins.

2. Case of Secondary Carcinoma of Axilla. H. B. A. Kugeler.

3. Case of Ludwig's Angina Successfully Treated. H. M. Sherman. Discussed by Alfred Newman.

4. Congenital Dislocation of the Hip and Extensive Skeletal Tuberculosis, with demonstration of patient. H. M. Sherman.

5. Clinical Experience with Leucocytic Extract (Hiss). H. B. Reynolds. Discussed by W. Ophuls.

Section on Surgery, Tuesday, October 21st.

1. Anastomosis of Hypoglossal and Facial Nerves for Paralysis Following Gun Shot Wound of Ear. Cullen F. Welty. Discussed by C. C. Levison, H. M. Sherman and W. F. Schaller.

2. Carcinoma of Rectum removed four and one-half years ago; Hypertrophied Prostate recently removed from same patient; Method of After Treatment of Enucleation of Prostate. Harry M. Sherman. Discussed by M. Krotoszyner, M. Silverberg, A. Newman and C. C. Levison.

Caesarian Section.

3. Indications for. A. B. Spalding.

4. Prognosis and Complications of. R. K. Smith.

5. Rupture of Uterus Following. L. I. Breitstein. Discussed by T. D. Maher, A. S. Keenan, M. Abrams and J. D. Simpson.

Section on Eye, Ear, Nose and Throat, Tuesday, October 28th.

1. Review of an Article by R. Goldman on the Treatment of Chronic Tonsillar Disease. Henry Horn.

2. Demonstration of Polyp from Naso-Pharynx of an Eight-Year-Old Child. J. J. Kingwell.

3. Some Late Effects of the Septum Operation. H. Y. McNaught. Discussed by C. F. Welty, M. W. Fredricks, H. Horn and J. J. Kingwell.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of November, 1913, the following meetings were held:

General Meeting.

Tuesday, November 11, 1913.

1. The Medical and Social Aspect of Borderline and Psychopathic Children. William Palmer Lucas. Discussed by L. Porter, E. C. Fleischner, J. L. Whitney, R. L. Richards, W. C. Alvarez and R. K. Smith.

2. The Binet-Simon Test. Ernest Bryant Hoag. Discussed by Grace L. Boalt, Adeline Brown, W. P. Lucas and L. Porter.

Section on Surgery.

Tuesday, November 18, 1913.

1. Arthritis. Leonard Ely. Discussed by C. G. Snow, H. M. Sherman, E. Rixford, K. Pischel, J. Rosenstirn, R. L. Wilbur, W. Ophuls, W. I. Baldwin and W. C. Alvarez.

2. Hygienic Shoeing. C. C. Crane. Discussed by J. T. Watkins, L. Ely, E. Rixford, J. Rosenstirn and S. T. Pope.

Section on Eye, Ear, Nose and Throat.

November 25, 1913.

1. Exhibition of Eye Cases. K. Pischel. A case of an 83-year-old man with synchysis scintillans of the right eye and cataract operated in left eye 25 years ago by the late Dr. Ferrer, without iridectomy. The sight is 5/5. The speaker drew attention to the excellent work done in San Francisco by some oculists of the former generation. B. Two cases of injury by pieces of steel entering the eyeball. In the first case the piece of steel was extracted from the vitreous with the big magnet and the traumatic cataract removed. The sight is now <5/6.

In the second case a piece of steel had entered the eyeball 26 years ago, causing only a few opacities of the vitreous. The sight and field are normal. The foreign body was located by Dr. Freytag 2 mm. outside of the eyeball.

2. Eye Symptoms Associated with Oxycephalus or Peaked Skull. W. F. Blake. Discussed by M. Kerschbaumer and J. Rosenstirn.

THE TWENTY-NINTH ANNUAL MEETING OF THE NORTHERN DISTRICT MEDICAL SOCIETY

Was called to order by the President, D. H. Moulton in the Hotel Sacramento, at 11 a. m., November 11, 1913.

The names of Drs. H. D. Barnard and E. H. Pitts were proposed for membership. Their names were referred to a board of two censors, Drs. J. H. Parkinson and R. A. Peers appointed by the chair. An address of welcome was then delivered by Dr. S. E. Simmons.

(1) First paper on Dysthyroidism by Dr. E. C. Turner of Sacramento. Discussed by Drs. Twitchell, S. E. Simmons, Gundrum and Jones.

(2) Second paper on the Butyric Acid Test in Diagnosis by Dr. F. F. Gundrum of Sacramento. Discussed by Drs. Twitchell and Turner.

(3) Third paper on A New After Treatment of Poliomyelitis by Dr. D. H. Moulton of Chico. Discussed by Drs. Jones, Cox, Culver, Hanna.

Moved by Dr. Peers, seconded by Dr. Culver that this paper be sent to the State Journal for publication. Carried. Meeting then adjourned for

luncheon tendered by the Sacramento Society for Medical Improvement.

Afternoon session began at 2:15, Dr. Moulton presiding. Drs. H. D. Barnard and E. H. Pitts having been favorably reported on by the censors were unanimously elected to membership.

Fourth paper on Auto-Intoxication was read by Dr. T. H. Stice of San Jose. Discussed by Drs. Gundrum, Watson and Loizeaux.

Fifth paper on Surgery of the Gall Bladder by Dr. A. M. Henderson of Sacramento. Discussed by Dr. James.

The society then proceeded to the election of officers for the ensuing year. The following officers were unanimously chosen:

President, J. W. James, Sacramento; first vice-president, R. N. Bramhall, Fair Oaks; second vice-president, T. H. Stice, San Jose; third vice-president, C. B. Jones, Sacramento; secretary, E. C. Turner, Sacramento. Censors—W. E. Briggs, A. M. Henderson, Sacramento; W. E. Bates, Davis; D. H. Moulton, Chico; W. S. Langdon, Stockton.

Moved by Dr. Parkinson, seconded by Dr. James, that the place of the June meeting next be left to the incoming president and secretary to decide upon.

Moved by Dr. C. B. Jones, seconded by Dr. Stice, to have the secretary send copy of minutes to Dr. P. M. Jones for publication or mention in the Journal. Carried.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. R. T. McGurk, Friday evening, October 31. The following members were present: Drs. W. J. Young, Lynwood Dozier, R. R. Hammond, H. E. Sanderson, Minerva Goodman, J. T. Davison, F. P. Clark, Mary Taylor, Dewey R. Powell, R. B. Knight, L. R. Johnson, Hudson Smythe, Margaret Smyth, E. A. Arthur, Barton J. Powell, C. R. Harry, J. E. Nelson of Lodi, G. G. Hawkins of Ione and R. T. McGurk, with Dr. William Fitch Cheney of San Francisco as guest.

A communication was read by the secretary from Mrs. D. G. Hasses, secretary of the Woman's Council of Stockton, requesting a donation from the Medical Society as a prize at the Better Babies' Show. Upon motion, seconded and carried, the communication was ordered laid on the table.

At the conclusion of the routine business Dr. William Fitch Cheney was called upon to read his paper "Syphilis of the Liver Imitating Cirrhosis." Needless to say, the paper was well presented and was accompanied by case reports showing the scope of Dr. Cheney's observations and deductions. Several members of the society took part in the discussion, reporting cases in their practice, which showed the efficacy of anti-syphilitic treatment when other methods failed.

Upon completion of the discussion, the meeting was adjourned and the members were invited to the dining room to partake of the repast provided by Mrs. McGurk.

R. T. McGURK, Secretary.

TULARE COUNTY.

The November meeting of the Tulare County Medical Society was held in Visalia, November 16. The society had as its guest Dr. Philip King Brown of San Francisco. After a Spanish banquet the regular monthly session was held at which Dr. Brown gave a very instructive talk, his subject being, "The Present Status of Vaccine and Serum

Therapy, the Modern Treatment of Cerebral Syphilis and Complications, and the Diagnosis of Diseases of the Blood with Microscopic Slides."

A. W. PRESTON, Secretary.

BOOK REVIEWS

Diseases of Children. By Benjamin Knox Rachford. Published by D. Appleton & Co., London, Eng., and New York. Price \$6.

This volume is pre-eminently practical. The author emphasizes the therapy of disease, passing quickly over its etiological and pathological factors. Scarcely a condition of childhood is left untouched. Modern methods of diagnosis are ably discussed. Especially to be commended are the chapters on childhood in general, and on infant feeding. This book deserves to become a working manual for the general practitioner. R. L. A.

Hygiene and Sanitation. A Text-Book for Nurses. By George M. Price, M. D., Director, Joint Board of Sanitary Control; Director of Investigation, New York State Factory Commission. 12mo., 236 pages. Cloth, \$1.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

An excellent little treatise on a subject especially important to nurses interested in public health or school work. It is clearly and concisely written, and the different chapters with their various subdivisions are well arranged, rendering it a valuable book for reference. Agnes Walker.

Practical Medicine Series, 1913. Vol. V. Pediatrics, edited by Isaac A. Abt, M. D. Orthopedic Surgery, edited by John Ridlon, M. D.

Serotherapy in hemorrhage is advocated, but not quite as enthusiastically as the late literature would warrant. The much mooted questions of the desirability or otherwise of feeding infants with Pasteurized and with boiled milks; with dried milk and with proprietary foods, is given brief notice. Little that is new can be announced in the field of acute infectious fevers. In fact, the year has thrown apparently little light on the old problems; but the tendency is to improve our statistics with a view to a better understanding of etiology and treatment of the disorders peculiar to infancy and childhood.

Dr. Ridlon's review of the year's work in the orthopedic field is characterized by great force and positiveness which give the charm of sincerity, but seem to denote a partiality that should not be so marked a feature of a work that should be a résumé and a review. Of great interest, however, are the discussions on tubercular joints, scoliosis, congenital hip dislocations and the methods for restoration of function after paralysis. G. H. T.

Surgery of the Vascular System. B. M. Bernheim, M. D. Lippincott, Philadelphia, 1913. \$3.00.

The first thing that strikes one looking at this book is the fact that it has the usual Johns Hopkins type of illustrations, which makes it almost unnecessary to read. However, if you do read it you will find some very practical suggestions. One very pertinent paragraph you meet in the introduction—"Brilliant laboratory results achieved in this work have often lured the inexperienced to try their luck, only to find that chance here plays no part and that success is measured only by years of trial, first in the laboratory, then in the clinic." The improvement of the technique of lateral arteriovenous anastomosis is very apparent, and undoubtedly, if followed, will insure a greater percentage of successful operations. S. T. P.

Practical Medicine Series, 1913. Vol. VI. General Medicine. Edited by Frank Billings, M. S., M. D., and J. H. Salisbury, A. M., M. D.

The review opens with a very good synopsis of Vaccine Therapy. Blood cultures in fevers of obscure origin are advocated. In typhoid, the prophylactic injections are not mentioned. The emetine treatment of amoebic dysentery is one of the newer things described.

The application of radiography in the diagnosis of diseases of the gastro-intestinal tract is well discussed and illustrated, though the conclusions seem rather more definite than those in the latest literature on this subject.

The chapter on gastric and duodenal ulcer is very complete and quite moderate in the conclusions arrived at.

In considering constipation the reviewers announce their disapproval of the Lane operation and give reasons therefor.

Though the ground covered in this volume has been confined to the acute infections and diseases of the gastro-intestinal tract, liver, pancreas and spleen, there is a great mass of interesting material presented in a very clear and moderate way.

G. H. T.

Essentials of Prescription Writing. By Cary Eggleston, M. D., Instructor in Pharmacology, Cornell University Medical College, New York City. 32mo. of 115 pages. W. B. Saunders Company, 1913. Cloth, \$1.00 net. W. B. Saunders Company, Philadelphia, London.

A small duodecimo of a little more than a 100 pages gives the "Essentials of Prescription Writing," concisely and in a very few words. In fact, the writer questions whether a few extra words, and a few more sentences, would not have made the work a little more impressive and a little more interesting. More attention than usual has been paid to the Metric System, and its application. A good and full explanation of the so-called "Standard" prescription and the ease with which it can be applied in converting the average apothecaries' prescription to a metric one is commendable and may be one of the means of making the metric more popular. The chapters on Vehicles, Incompatibilities, Doses, etc., follow only too concisely the usual writings on these subdivisions. All in all it carries out its object—it "Provides the student of medicine with a succinct treatment of the subject of prescription writing." A. L. L.

Syphilis and the Nervous System. By Max Nonne. Translated by Ball. Published by Lippincott, Philadelphia, 1913.

The English translation of Ball should bring this valuable second edition into wide use in this country.

More light could have been thrown on the subject of basilar meningitis and its symptomatology in view of much recent work.

In the discussion of polyuria and polydipsia on page 97, of glycosuria and polyuria on page 151 and of diabetes insipidus on page 153 as symptoms of basilar meningitis no explanation for their occurrence of significance is attempted.

For the most part these are all expressions of hypophyseal involvement and may be caused as well by any other lesion as by lues. If the basilar syphilis affects the interpeduncular as is common, the result is the same as if some other growth occurs there.

The chapters on the reactions and on therapy give one a sound working basis which comes with

a sense of relief after the numerous current articles which too often make exaggerated and positive statements based on a few unusual coincidents.

H. C. Naffziger.

A Clinic Manual of Mental Diseases. By Francis X. Dercum. W. B. Saunders Co., 1913.

This work of 425 pages deals essentially with the clinical aspect of mental disease and presents in concise form the views of the well-known Philadelphia neurologist and psychiatrist. There is something refreshingly personal in the author's presentation of his subject, and this, together with a rather unusual classification, gives the work a distinctive character. For the practising physician Dercum believes that the understanding of mental disease will be made more easy by the aid of internal medicine than by psychologic interpretation, and following this opinion prominence is given in Part III of the work to a chapter on "The Clinical Forms of Mental Disease Related to the Somatic Affections" and a second chapter on "Mental Disease Related to Age." For the group of mental states commonly designated as Psychasthenias Dercum proposes the term "Neurasthenic-Neuropathic Insanities," intending to convey by this expression the condition as he sees it: neuropathy plus nervous exhaustion. The Freudian sexual theory is discussed at some length but does not meet with the approval of the author, although the importance of buried symptoms complexes in the etiology of abnormal mental states is admitted. The final chapter takes up the question of treatment, extra mural as well as intra mural treatment being considered. Prophylactic treatment in children suffering from neuropathic heredity is considered of prime importance. The need of a psychopathic hospital for acute cases in every large city is emphasized.

W. F. S.

Surgery of the Eye. A Hand-book for Students and Practitioners. By Ervin Török, M. D., Surgeon to the New York Ophthalmic and Aural Institute; Ophthalmic Surgeon to Beth Israel Hospital; Consulting Ophthalmologist to the Tarrytown Hospital, and Gerald H. Grout, M. D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Instructor in the Eye Department, Vanderbilt Clinic; Consulting Ophthalmologist to the Bellevue Hospital, First Division. Octavo, 507 pages, with 509 original illustrations, 101 in colors, and 2 colored plates. Cloth, \$4.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

After looking through this handy volume, one feels inclined to agree on the whole with Dr. Arnold Knapp's impression—given in a one-page introduction to the work—that the arrangement of the subject matter is simple and practical and the text clear and brief. Of the wealth of illustrations, the clear and numerous cuts of instruments distributed freely throughout the text would seem to be an especially serviceable arrangement for the beginner. We cannot grant the same commendation, however, to many of the liberally given illustrations of the operative procedures, especially amongst the photographs. In far too many of the latter, purporting to give details of technic, the main *raison d'être* of the illustration, the bulbous itself, is so indistinct and small as to be absolutely without any real meaning to the reader not already familiar with the procedure. Instead of packing the volume with such photographs, purporting to aid the student, it would seem to us that a future edition of the book, as an elementary treatise, would gain decidedly by the use of prominent

type in emphasizing certain phases of the operation and especially in calling attention to the fatal risk so largely lurking in capital operations of the bulbous. The numerous good and instructive diagrammatic illustrations are a distinctive feature of the book. Size and get up deserve nothing but praise; especially commendable in an ophthalmological work is the large and clear type. N.

Erinnerungen und Betrachtungen. Prof. Dr. Heinrich Fritsch. A. Marcus & Co., Weber's Verlag, Bonn, 1913.

The book contains the reminiscences and observations of the well-known veteran German Gynecologist, Heinrich Fritsch, who participated in the Franco-Prussian war of 1870-71 in the capacity of volunteer surgeon, and as such witnessed many engagements of the contesting armies.

We are accustomed to look upon Germany as one of the most progressive countries and as one of the foremost exponents of medicine as a science and art. But while the organization and preparation of the Prussian fighting forces were admirable, we are told by Fritsch that the sanitary measures of the army were, in the beginning of the war, obsolete and totally inefficient. The soldiers' food was qualitatively and quantitatively poor and provisions for good drinking-water were inadequate. Thus the German soldier was, especially at the onset of the cold season, exposed to untold misery. Scant or no provision was made for the care of the wounded after decisive battles. As proof of this Fritsch graphically relates how he was, after the sanguinary battle of Gravelotte, left alone at night in a forest with a large number of wounded soldiers, without water or any means of transportation. Finally he succeeded in having a large number of the gravest cases removed on most rudimentarily improvised stretchers. One of the men, carried in this fashion through the dark forest, died on the road. Before reaching the field-hospital the cortege was in danger of losing more men by being fired upon from their own outposts.

The German army-surgeon, who is still looked upon as a negligible quantity by the commissioned officer, had constantly to advance to the firing line during battles and work amid flying bullets. Probably less dangerous, but certainly more arduous, were his duties in the field-hospital. Surgery was still in its preantiseptic or rather preaseptic era and the majority of soldiers, therefore, were hopelessly sick from blood-poison. One chill was followed by another and uncontrollable hemorrhages precipitated the invariably fatal outcome. Physicians were scarce and those in authority, in many instances, incapable or too old. Fritsch himself who had resigned his assistantship in a gynecological clinic to join the army, keenly felt his lack of surgical training. Left to his own resources and almost alone in charge of a large hospital of over 200 beds, into which regularly over night 20 to 30 new cases were "dumped," which in most instances died without an attempt at a diagnosis, he was often overwhelmed by the weight of his responsibility and at times unhappy and inconsolable on account of his poor therapeutic results. For all the misery caused by chills, blood-poison, hemorrhages, etc., he had, as he puts it, nothing more to offer than the morphin-syringe and his tears.

Fritsch rides through the enemy's country with open eyes, and, while performing his duties with zeal and self-sacrifice, he finds time and opportunity for his observations on the beautiful natural scenery of southeastern France, on camp-life and on many interesting episodes of the great struggle; he gives fascinating descriptions of battles, reliable contributions upon our knowledge of France and

her inhabitants and discusses here and there many questions of medical import. Everywhere the author's good judgment and sound criticism are apparent in the book, the perusal of which will prove to old and young physicians alike, profitable and delightful. M. K.

The Protein Split Products in Relation to Immunity and Disease. By Victor C. Vaughan, M. D., LL. D., Dean of the Department of Medicine and Surgery of the University of Michigan, Victor C. Vaughan, Jr., M. D., A. B., in charge of the Tuberculosis Work of the Detroit Board of Health and J. Walter Vaughan, M. D., A. B., junior attending Surgeon to Harper Hospital, Detroit. 12mo, 476 pages, illustrated. Cloth, \$3.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

A majority of the popular medical writings of a decade add but a trifle to the common store of knowledge, and, as a rule, they do little more than reveal what was already sufficiently obvious. This is to be practical. It is a way the age has, apparently, of compounding with its natural limitations. Fortunately, from time to time a book appears which is in vigorous contrast to the uniform monotony of its contemporaries, and, because it gives a more intimate and distinct view of nature, it irresistibly impels thought into new fields. The verdict of time probably will award this merit to Vaughan's work on the protein poison. At any rate, it may be doubted whether, in recent years, an equally solid and scholarly contribution to medical science has appeared. It is a credit in every way to American research.

single sentence in the highly significant preface: "The cell is not the unit of life; life is molecular." As one may correctly infer from this, the mode of treatment throughout is essentially chemical. And it is of the highest quality. The principal argument is based upon an impressive body of experimental data, the results of fifteen years' work, and a prodigious amount of labor has been expended in the pertinent literature. This is a combination, admittedly, which entitles one to write with the seal of authority. The authors have, however, in no instance exceeded in statement what was well justified by ascertained fact. The reasoning, of necessity, is close, but it is also perfectly intelligible. And that is saying a great deal, when it is considered that the problem of anaphylaxis, which, hitherto, has been "invested with all the sublimity that obscurity can bestow," is analyzed with ability of a high order. They plead for a greatly simplified conception of the mechanism of immunity.

In great part their data were derived from bulk analyses of various bacteria. It was not unusual, for example, to employ 500 grams of dried tubercle bacilli at a single experiment. These huge masses of bacteria, or "particulate proteins," as they are designated, they hydrolyzed, and afterwards studied the biological peculiarities of the cleavage products. Owing to its wide scope, it is not possible to discuss the work in detail; one or two facts must suffice. They were unable to detect cellulose. This of itself is surprising. But in all protein substances examined by them, bacterial or other, from the typhoid bacillus or egg-white, they found a common, central non-specific poison nucleus. This is known as the Vaughan poison. The lethal dose is half a milligram. Undoubtedly, in many biological reactions, this poison is a highly important factor. It is non-diffusible, and, therefore, when released, as it must be, in the peptic cleavage of protein, it usually is innocuous. In the parenteral digestion of a foreign protein, on the contrary, this poison is set free in the tissues where it is potent for harm.

These facts are profoundly significant in the phenomena of sensitization.

The relation of the protein poison to the configuration of the parent molecule is of course unknown. We do not approach that problem at all. But the constructive studies of Fischer in the synthesis of the polypeptids, and these later analytical studies of Vanghan in the hydrolytic cleavage of native proteins suggest that the thermal relations of the atoms (heats of formation and dissociation; latent or other), may at the last prove to be of paramount importance. At any rate, the energy factor appears steadily to elbow its way into prominence.

The chapters on parenteral digestion and protein fever should be read by all who would keep abreast of modern thought, and no man who uses vaccines frequently can afford to be without this book. The authors are opposed to the use of tuberculin in the treatment of advanced tuberculosis.

C. Q.

UNUSUALLY LARGE BABY.

Mrs. L.— was due to be confined October 15, 1913. She menstruated last Jan. 12, 1913. She was taken in labor at 2 a. m. November 7. I was called 4 a. m. and recognized a breech presentation. The second stage of labor began at 10 a. m. Pains being hard and no engagement at the time, after two hours counsel was called and it was decided, after careful examination, that the child could not be born alive, naturally. She was taken to the Enloe Hospital and Caesarian section performed by Drs. N. T. Enloe, Ella F. Gatchell and W. B. Johnson. The child was a boy, weighed 18 pounds, measured 23 inches in length, leg 9½ inches long, arm 7½ inches long, circumference of chest 17 inches, circumference of head 15 inches. The convalescence was uneventful. The mother and boy returned home November 17, the wound entirely healed and the mother as well as following a normal labor. The mother weighs 130 pounds, the father 160 pounds. I can vouch for all these weights and measures.

Ella F. Gatchell.

ARMY MEDICAL CORPS EXAMINATIONS.

The Surgeon-General of the Army announces that preliminary examinations for appointment of First Lieutenants in the Army Medical Corps will be held on January 19, 1914, at points to be hereafter designated.

Full information concerning these examinations can be procured upon application to the "Surgeon-General, U. S. Army, Washington, D. C." The essential requirements to secure an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of Doctor of Medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training as an interne, after graduation. The examinations will be held simultaneously throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

In order to perfect all necessary arrangements for the examinations, applications must be completed and in possession of the Adjutant-General at least three weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There are at present twenty-six vacancies in the Medical Corps of the Army.

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Non-Official Remedies, 1913, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Agglutinating Sera for Diagnostic Purposes.—These are the sera of animals (horses) immunized against various bacteria. For use a solution is added to a suspension of the bacterium to be tested, and after incubation for a certain period the mixture is examined.

Agglutinating Serum for the Identification of *Bacillus Paratyphosus A.*—Intended for use by the macroscopic method. H. K. Mulford Co., Philadelphia, Pa.

Agglutinating Serum for the Identification of *Bacillus Paratyphosus B.*—Intended for use by the macroscopic method. H. K. Mulford Co., Philadelphia, Pa.

Agglutinating Serum for the Identification of *Bacillus Typhosus.*—Intended for use by the macroscopic method. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Nov. 1, 1913, p. 1630).

Antistreptococcic Vaccine (Scarlatina Prophylactic).—For description of *Streptococcus Vaccine* see N. N. R., 1913, p. 226. The Abbott Alkaloidal Co., Chicago.

Strepto-Bacterin (Scarlatina Bacterin) Polyvalent.—For description of *Streptococcus Vaccine* see N. N. R., 1913, p. 226. The Abbott Alkaloidal Co., Chicago (Jour. A. M. A., Nov. 15, 1913, p. 1811).

Silk Peptone "Hoechst."—Peptone made from silk and standardized to a uniform rotatory power. It is used for the detection of peptolytic ferments, either by changes in optical activity or by the precipitation of tyrosin produced by its digestion. Farbwerke Hoechst Co., New York (Jour. A. M. A., Nov. 15, 1913, p. 1811).

Acne-Bacterin Polyvalent.—For description of Acne Vaccine see N. N. R., 1913, p. 221. Abbott Alkaloidal Co., Chicago.

Coli-Bacterin Polyvalent.—For description of *Bacillus Coli Vaccine* see N. N. R., 1913, p. 221. Abbott Alkaloidal Co., Chicago.

Friedlander Bacterin Polyvalent.—For description of Friedlander Vaccine see N. N. R., 1913, p. 222. Abbott Alkaloidal Co., Chicago.

Gonococcus-Bacterin Polyvalent.—For description of Gonococcus Vaccine see N. N. R., 1913, p. 223. Abbott Alkaloidal Co., Chicago.

Pneumo-Bacterin Polyvalent.—For description of Pneumococcus Vaccine see N. N. R., 1913, p. 224. Abbott Alkaloidal Co., Chicago.

Staphylo-Acne-Bacterin Polyvalent.—For description of mixed vaccines see N. N. R., 1913, p. 224. Abbott Alkaloidal Co., Chicago.

Staphylo-Albus-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Staphylo-Bacterins (Human) Albus-Aureus-Citkaloidal Co., Chicago.

Staphylo-Bacterins (Human) Albus-Aureus-Citrus.—For description of *Staphylococcus Vaccines* see N. N. R., 1913, p. 225. Abbott Alkaloidal Co., Chicago.

Strepto-Bacterin (Scarlatina Bacterin) Polyvalent. Abbott Alkaloidal Co., Chicago.

Antistreptococcic Vaccine (Scarlatina Prophylactic).—Abbott Alkaloidal Co., Chicago.

Strepto-Bacterin (Human) Polyvalent.—For description of *Streptococcus Vaccines* see N. N. R., 1913, p. 226. Abbott Alkaloidal Co., Chicago.

Typho-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Typhoid Prophylactic.—For description of Typhoid Vaccine see N. N. R., 1913, p. 227. Abbott Alkaloidal Co., Chicago (Jour. A. M. A., Nov. 22, 1913, p. 1900).

Arheol.—Arheol is santalol, the chief constituent of sandalwood. Its action is the same as that of sandalwood oil, but is claimed not to cause dis-

turbance of the stomach or the kidneys. Arheol is marketed only in the form of Arheol Capsules, 0.2 Gm. Alexandre Astier, Paris, France (Jour. A. M. A., Nov. 22, 1913, p. 1900).

Gluten Food A, Barker's.—A wheat-gluten flour, containing not more than 4 per cent. of carbohydrates and 87 per cent. protein.

Gluten Food B, Barker's.—A wheat-gluten flour, containing not more than 7 per cent. carbohydrates and 85 per cent. protein.

Gluten Food C, Barker's.—A wheat-gluten flour, containing not more than 12 per cent. of carbohydrates and 83 per cent. protein.

Barker's gluten foods are indicated when a practically starch-free diet is desired, particularly in most forms of diabetes. It can be taken uncooked or made into muffins. Herman Barker, Somerville, Mass. (Jour. A. M. A., Sept. 27, 1913, p. 1042).

Acne Bacterin Polyvalent.—For description of Acne Vaccine see N. N. R., 1913, p. 221. Abbott Alkaloidal Co., Chicago.

Coli-Bacterin Polyvalent.—For description of Bacillus Coli Vaccine see N. N. R., 1913, p. 221. Abbott Alkaloidal Co., Chicago.

Friedlander-Bacterin Polyvalent.—For description of Friedlander Vaccine see N. N. R., 1913, p. 222. Abbott Alkaloidal Co., Chicago.

Gonococcus-Bacterin Polyvalent.—For description of Gonococcus Vaccine see N. N. R., 1913, p. 223. Abbott Alkaloidal Co., Chicago.

Pneumo-Bacterin Polyvalent.—For description of Pneumococcus Vaccine see N. N. R., 1913, p. 224. Abbott Alkaloidal Co., Chicago.

Staphylo-Acne-Bacterin Polyvalent.—For description of mixed vaccines see N. N. R., 1913, p. 224. Abbott Alkaloidal Co., Chicago.

Staphylo-Albus-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Staphylo-Aureus-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Staphylo-Bacterins (Human) Albus-Aureus-Citrus.—For description of Staphylococcus Vaccines see N. N. R., 1913, p. 225. Abbott Alkaloidal Co., Chicago.

Strepto-Bacterins (Human).—For description of Streptococcus Vaccines see N. N. R., 1913, p. 226. Abbott Alkaloidal Co., Chicago.

Typho-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Typhoid Prophylactic.—For description of Typhoid Vaccine see N. N. R., 1913, p. 227. Abbott Alkaloidal Co., Chicago (Jour. A. M. A., Oct. 4, 1913, p. 1297).

Ninhydrin.—Ninhydrin is triketohydrindenhydrate a derivative of inden. Colorless crystals, readily soluble in water. The aqueous solution gives a blue color on boiling with protein bodies or amino acids derived from them, which have the amino group in the alpha position. Ninhydrin is used in the diagnosis of pregnancy according to the method of Abderhalden. Farbwerke-Hoechst Co., New York (Jour. A. M. A., Oct. 11, 1913, p. 1377).

Placentapeptone.—A peptone derived from the placenta. It is used in applying the optical test for pregnancy according to Abderhalden. Farbwerke-Hoechst Co., New York (Jour. A. M. A., Oct. 11, 1913, p. 1377).

Antirabid Vaccine.—It is prepared according to the method of Pasteur and is a complete treatment, consisting of 25 doses, to be administered during 21 days. Schieffelin and Co., New York (Jour. A. M. A., Oct. 11, 1913, p. 1377).

Copper Citrate, Merck.—This salt complies with the standards for copper citrate, N. N. R., Merck & Co., New York (Jour. A. M. A., Oct. 11, 1913, p. 1377).

Transfer of Agency.—The biologic products of the Sophian-Hall-Alexander Laboratories which were accepted for inclusion with N. N. R., are now sold by E. R. Squibb & Sons (Jour. A. M. A., Oct. 11, 1913, p. 1377).

USE OF HEROIN SPREADING RAPIDLY AMONG DRUG FIENDS.

Washington, D. C.—According to information gathered by the U. S. Department of Agriculture, there has been a sudden and very significant increase in the use by persons with a drug habit of the little-known but very dangerous drug called "heroin." The sales of this drug have recently increased greatly, particularly in those States which have rigid laws preventing the indiscriminate sale of morphine and cocaine. Investigation of the subject establishes the fact that many drug victims who formerly used morphine and cocaine, and who under the new laws find it difficult to obtain these substances, have begun using heroin, the sale of which is not as yet as carefully restricted under state laws. The drug is said to be fully as dangerous as morphine and by many is held to be much worse, for the reason that it occasionally kills the victim outright, and its habit is far harder to overcome than the use of the other drugs. The Department, pending further action, specially warns all people who are unfamiliar with the drug to avoid all preparations containing the substance and to take it only on the prescription of reputable physicians.

Heroin, the consumption of which by drug takers has recently increased so markedly, is a derivative of morphine, the opium alkaloid. It is known in chemical parlance as diacetyl morphine, and it is frequently found as a constituent of a number of proprietary drugs. Its use seems to be especially notable in parts of Pennsylvania. This year the coroner's office in Philadelphia County has held inquests on five sudden deaths from heroin poisoning. In each case the victim was a heroin fiend and was on a heroin debauch and took an overdose. The substance apparently is far more dangerous for drug users than morphine or cocaine. Drug fiends apparently are able to consume relatively large quantities of the other two drugs, but any sudden and material increase in the amount of heroin taken is very liable to prove fatal. As indicating the wide sale of this substance, it is known that one druggist in Pennsylvania whose store was located in an undesirable section of his city has been buying heroin tablets in 25,000 lots.

The labels of proprietary and other medicines purchased by laymen should be carefully scrutinized for a statement which is required by the National Food and Drugs Act of the quantity or proportion of heroin, or any derivative or preparation thereof.

The word "heroin" on any label should be regarded as a danger signal, according to the experts of the Department.

NEW MEMBERS.

Baldwin, W. I., San Francisco.
Long, Herbert Everett, San Francisco.
Wilson, H. P., Whittier, Cal.
McKellar, Jas. H., Pasadena, Cal.
Lando, M. E., Oakland, Cal.
Chilson, Wm. C., Tulare, Cal.
McClelland, Jas. Hugh, Dos Palos, Cal.
Mitchell, L. W., Bakersfield, Cal.
Landis, Chas. C., Chico.

DEATHS.

Morrison, Jno. McI. (died in Berkeley).
Meyers, Robt. Chas., San Francisco.
Campbell, Geo. W., Los Angeles.
Smith, Harry A., Los Angeles.
Medlock, J. R., Santa Ana.
Martinez, Felipe, San Francisco.
McManus, F. A., Crockett, Cal.
Taggart, H. W., Redwood City.

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be
Typewritten.

Notify the office promptly of any change of address, in
order that mailing list and addresses in the Register may
be corrected.

VOL. XII FEBRUARY, 1914. No. 2

EDITORIAL NOTES

NOTICE!

Forty-Fourth Annual Meeting.

SANTA BARBARA, HOTEL POTTER,
APRIL 14, 15 AND 16, 1914.

RAILROAD RATES. The customary railroad rate of one and one-third fare, provided 50 or more are in attendance, will prevail. When you buy your ticket to go to Santa Barbara, pay the full fare and get a receipt-certificate. When you get to Santa Barbara, present this to the Secretary to be signed and then when you get your return ticket, hand this receipt to the agent and he will give you a return ticket for one-third the full fare. Do not fail to get the receipt-certificate or to have it signed by the Secretary, for if you do, you have no redress.

HOTEL RATES. The rates this year are on the European plan and do not include meals.

Room, without bath, one person, \$1.00
Room, without bath, two persons, 1.50
Room with bath, one person, 2.00
Room with bath, two persons, 3.00

Those who desire may be accommodated on the American plan, in which case add \$2.50 per day per person to the above rates.

THE PROGRAM this year promises to be excellent and should call out a large attendance. Every delegate should make it his first business to attend this session as matters of the utmost importance will come up for consideration. Questions have

arisen in which every member of the society is vitally interested and the delegates, who represent large numbers of our members who cannot attend, should be sure to be present, even if at a personal sacrifice.

Secretaries of county units should make it their special duty to attend this meeting so that they may be in a position to explain to their members just what was done and why. County Secretaries can do this much more effectually by talking directly to their members than it can be accomplished in any other way.

WHY NOT SAVE THE MONEY?

One of our advertisers is good enough to give us information in regard to specific instances wherein his advertising in your JOURNAL does or does not pay. A customer came to his store and noticing a certain article remarked that he did not know they carried that; he had just bought one from an eastern house and had had to pay the same price, plus the express charges of \$3.40. And that very article had been advertised in your JOURNAL. The local dealer would have saved that member at least \$3.40. Does it pay to look through the advertising pages? It would have paid that one doctor on that one purchase, \$3.40; how much more he has thus foolishly spent it is impossible to say. Another definite instance where a member bought from an eastern house an article advertised in your JOURNAL by a local dealer, is one in which the article cost the purchaser 25% more than he could have bought it for right here at home. It is safe to say that members could save much more than the amount of their annual dues if they would look through the advertising pages of their JOURNAL and purchase goods from their own advertisers. "It pays to advertise" is very true; it is also and equally true that "It pays to read advertisements"!

SUITS FOR DAMAGES AND THEIR DEFENSE.

Some of our members who have joined in the last year or so do not understand that the State Society has a legal department of the very best and that it defends its members, without cost to them, other than their regular dues and assessments, in all such actions. Membership in the State Society, because of this one feature alone, is now one of the most valuable assets that a practicing physician can have. The suits which we have defended, all of them successfully, in 1913, would have cost the individual physicians sued a great many thousands of dollars—and they would not all of them have been won. Our legal department is so well up in this work and our lawyers are of such high standing that in many cases where the member has also had insurance in some company, he has requested our attorneys to take charge of his case. The rules covering this work, formulated by the Council, are very simple and it may not be untimely to remind our members of them.

First of all, a physician must at all times be a member in good standing of his county medical

society. No one will be defended who was not a member at the time he treated the patient for the alleged malpractice and also at the time when the suit is brought; that means he must be continuously a member. All memberships terminate on December 31st, but all who were members on that date are carried as members till March 1st, at which time they are automatically dropped as from January 1st and when they pay up and their names and the amount of the assessment for them are sent in by the secretary of the county unit, then they are placed on the roll as from the date when the name and the money was received in the office of the State Society. They have lost their protection between the first of January of that year and the date when they are again put on the roll of members. Therefore it is important to see that your dues are paid promptly in January, when they are due. When any threat is made against a member or any claim for repayment of money or anything of that sort, it should be reported at once to the Secretary of the Society, Dr. Philip Mills Jones, Butler Building, San Francisco. When this is done it enables us to head off a good many suits that otherwise might be brought. When a suit is filed and the papers are served on a member, he must send them, or an exact copy, to the Secretary within 48 hours. We are not responsible, financially, for any unauthorized consultations with local lawyers. When our chief counsel cannot attend to cases personally, he arranges with a local attorney, after consultation with the defendant. Never answer any threatening letters from patients or lawyers; send them immediately to the secretary; be sure that your dues are always paid up; if you are served with papers in a suit, send them immediately to the secretary.

Could any rules be simpler? Suits are increasing rather than decreasing; there seems to be a craze to "sue the doctor"; are you protected? You do not and cannot know what day some disgruntled patient may sue you. It is much wiser to pay the few dollars a year your dues cost you than many hundreds or thousands of dollars it would cost you to defend a suit. Medical defense by the State Society is real defense; it defends.

A NEW MEDICAL (?) ORGAN FOR "SLAMMING."

Apparently there were not in existence enough so-called medical (?) journals living on fraudulent and deceitful advertising and so desirous of slamming the American Medical Association; a new publication has been started, but whether it will be parasitical and thrive on the nostrums is not yet certain; it is young, very young, and its circulation is bound to be small, very small. It is the *Journal of the American Medical Editors' Association*, that highly upright and cleanly organization of which mention has been made before, in the pages of the JOURNAL. Vol. I, No. 2, is the issue under present observation and it contains three separate items that are intended to be deliberate slams at the Association. Two of them

relate to the row that Lydston has tried for years, very ineffectually, to start in the Association. He tried to get the public prosecutor in Chicago to take legal action against the Association to have its present form of organization dissolved. The public prosecutor would not do this so action was taken against him to compel him to do it; he was sustained and the case then taken on appeal; the appellate court reversed the lower court and ordered the case against the public prosecutor tried. This decision of the appellate court has been appealed to the supreme court of Illinois by the public prosecutor. The case has not come near the Association at all; if the supreme court should decide that the public prosecutor must proceed against the Association, why then there would be a suit against the Association. As some of the best lawyers in Chicago incorporated the Association, and then studied the matter out very carefully and reincorporated under the present form of organization, it does not seem likely that a suit will ever be won dissolving the present form of organization. But if such should be the case, what does it mean? Merely that the Association will have to reform in some other manner and one conforming to the construction of the laws that the courts may put upon them. And this is the terrible thing that has happened to the Association—according to its not-too-clean-handed enemies! We wish this new medical (?) journal as long a life and as successful a career as its honorable and upright intentions and its honesty of policy may entitle it to receive.

A SUGGESTION FOR HELP.

The Santa Barbara County Medical Society publishes a printed announcement and program of meetings which is sent out to the members a week or ten days in advance. This is an excellent idea in itself, but it was not the particular thing in mind. A few months ago the Secretary very thoughtfully printed in this announcement, a list of laboratories and biological depots advertising in the STATE JOURNAL. Will not every county society that issues a bulletin or prints an announcement, from time to time give a list of a number of different advertisers in some line of activity or another, which advertise in the JOURNAL? Will the editors of those bulletins be good enough to call attention to the fact that members may very often save money by buying what they need from our advertisers rather than by sending to some eastern house for the article? Two instances of an actual saving of this sort—or rather, a saving that was not!—are referred to in another editorial note in this issue. Nearly everything that you may want to purchase can be secured from some advertiser in your JOURNAL and by trading with him you are returning the compliment he has paid to you by placing an advertisement in your JOURNAL. We wish to thank Dr. Barry and the Santa Barbara County Medical Society for their courtesy and their good sense and it is sincerely to be hoped that other societies will follow the same good example.

THE COSTUME OF "THE COLLEGE."

In several comments adverse to the new American College of Surgeons we find the institution objected to on the ground of its exotic character. There is an imputation of a departure from American ways; the sober-minded among the critics discern invidious and undemocratic distinctions, which the facetious exaggerate into the establishment among surgeons of a haughty peerage, possessed of undue privileges. That the founders of "the College" do not intend to cultivate Jeffersonian simplicity is true, as appears from the information which has reached us regarding the official costume of the Fellows: this is indeed exotic and calculated to confirm apprehensions of aristocratic academic pretensions, which we would be at some pains to allay.

The price of the gown awakens no suspicion of the splendor it will purchase. It is \$11.90. The amount is probably not the result of a mere caprice of economics. Its rather sudden halt before the dozen suggests a psychological influence. We fancy we see a propensity to prodigality checked by prudence: magnificence there must be, though not at any price, and magnificence there will be. For we read: "Body of Gown, navy-blue mohair. A scarlet velvet facing five inches wide extends around the neck and down each side of the front. The Cap is of same material as Gown with scarlet tassel."

Verily a dainty creation, judging from this description. But the accompanying illustration shows us the familiar cut of the garb of an Oxonian. No sense of incongruity here in translating the traditional vestment of Oxford, which "whispers from its towers the enchantments of the Middle Ages" to where the characteristic note is the last squeal of the butchered pig resounding from the shambles.

It may be urged that an Oxford gown and cap, having been adopted in so many scholastic establishments of America, should not be considered exotic; to which we can only return that the term is applied rather with regard to American principles than to American practices. And, by the way, if the American College of Surgeons is to look to other academic institutions in this country for its models we may yet be apprised of its having adopted a college yell,—for which an imitation of the vociferation of the afore-mentioned victim of the stockyards may be recommended.

But back to the dazzling robe! There are atrabilious critics who deny that scholarly dignity is enhanced by gaudy garments. They must be blind indeed to the advantages of pageantry; and may we not infer that the navy-blue and the scarlet velvet are to serve the purposes of pomp and ceremony? Is there not further foundation for the assumption that gorgeous spectacles come within the scope of the College in the article of its by-laws which states that the object is to "elevate the standard of Surgery"? Unread in the Philosophy of Clothes must he be who would cavil at the costume of "the College" and its variegation. Let such an one turn to his Sartor Resartus and there learn with what a shudder Professor Teufelsdröckh pictured to himself a solemn festival at Court spoiled

by the starting of the buttons and the evaporation of solid wool, "the Clothes flying off the whole dramatic corps," leaving common clay where had stood before Majesty and resplendent dignitaries: with a like shock would he contemplate an assemblage of the Fellows, where, just at the moment when perhaps seven thousand degrees are being conferred, the Standard of Surgery drops from its elevation, the tassels cease their waving, the solid mohair evaporates, the velvet slips from the several necks and down each side of the several fronts, the scarlet and the navy-blue fade away, and the whole company stand revealed as ordinary doctors who incise and suture and puncture for a living.

"SOCIAL FERMENT."

Dr. Henry B. Favill, of Chicago, the Chairman of the Council on Health and Public Instruction of the American Medical Association, in an address before the last meeting of the Mississippi Valley Medical Association, opens his subject, "Child Culture the Function of Organized Medicine," with some paragraphs that are well worth repeating. Indeed the whole address is well worth careful reading and we only regret that it is too long for us to give it space in the JOURNAL; a copy can be had, however, by sending a request for it to the Secretary, Dr. Fred. R. Green, 535 North Dearborn St., Chicago, Ills. For something over two years your JOURNAL has been calling attention to the widespread condition of unrest that is to be found all over the country and in all walks of life and to many instances in which it has exhibited itself within the medical profession or without it, but affecting it materially. Of this same condition Dr. Favill says:

"In regarding the field of human thought one is impressed with the intense activity of what may without exaggeration be called social ferment. In every direction which one may look there is evidence of unprecedented stir. Nothing goes in its familiar lines, nothing maintains its accustomed pace. The world is agitated. This is not confined to human action; it is fully as marked in the realm of abstract conception, and through it all penetrates a spirit of intellectual adventure, which beyond doubt is the influence which is ultimately to bring some order out of very obvious chaos. To this activity we react variously. The conservative is disturbed, perplexed and often pained by the radical and iconoclastic temper of the time. The radical is inspired, stimulated and often intoxicated by the wonderful kaleidoscopic readjustments which ensue on agitation of the foundations. Between abide the mass of people, partly thinking, partly dreaming, partly stolidly accepting the dictate of the day. Superficially, the outlook offers opportunity for captious criticism. In the tearing asunder of the social fabric, dignity of life, stability of equilibrium and quality of taste seem to be disregarded. In the desire to see the wheels go round, the delicate mechanism is threatened. In the passion for ultimate knowledge, the beauty of the flower is destroyed."

WHERE DOES THE DOCTOR COME IN?

To the Editor of the STATE JOURNAL:

Dear Sir: At a meeting of the San Francisco County Medical Society, held Jan. 6, 1914, the plans of the Industrial Accident Board of the State of California, were unfolded to the medical profession.

It is not my purpose to question the economics of this movement, but one point is not clear to me. It was stated that the cost of this insurance falls on the "ultimate consumer." Every employer raises the price of his commodity and the employees constituting the larger proportion of the population pay the larger part of the tax. Does it really work out that way? Wages in this state are higher than in any community and the manufacturers are pretty well handicapped now in trying to compete with other communities and countries. Can they raise the price of their commodities?

Again, add together the employees of the railroads, street-car companies, telephone, gas and electric corporations, the sum would approximate if not exceed one-half the employees of the state. Do you believe for one instant that the various commissions appointed for the sole purpose of reducing the rates of these corporations will allow a raise? However, we are mainly interested in the effect of this measure on the medical profession. As I listened to the honeyed phrases of what this board is going to do for the medical profession, they sounded very familiar. I am coming to the belief in reincarnation. Methinks that thousands of years ago in a previous incarnation I heard those same phrases on the banks of the Euphrates. "Just compensation" forsooth! Just the compensation that the barnyard fowl of the story received, in just the same segment of the vertebral column and with just the same carpenter's implement. You may recall the days of the San Francisco fire; laborers received three dollars a day for eight hours' work, six days a week; the medical man received \$100.00 a month 24 hours a day and seven days a week. Are the medical men employed by the Board paid by piecework? Nay, nay, so much a month, no matter how much they may be obliged to do.

How about the insurance company? Have you heard? Ten per cent. of the premium collected for which the doctor not alone attends the patient, furnishes medicines and dressings, but pays the hospital expenses as well, should a stay in a hospital be required. What happens to the man who still has faith in his regular medical attendant? He and his doctor are watched by a State Inspector (let us hope he has some idea of surgery) and the moment said inspector feels that he can do the job better, the patient is carted, nolos volens, to a hospital. And what hospital? The state will contract with some institution to take care of its dependents. Will it send them to one of the so-called contract hospitals? Oh no, they are under the ban of the medical societies. A contract will be made with the university hospitals and I am wondering what the labor organizations will say when they learn that their members have become clinical material.

There is, moreover, a far greater aspect to this movement. Kindly file the following statement somewhere for future reference! When the state legislature meets in January, 1917, the Accident Industrial Board, proud of its success and moved by the "progressive" spirit of the times, will introduce a bill extending its functions to include all sickness. Of course there must be a maximum wage limit and it will be fixed where the income tax begins, \$3000 a year. And where will poor robin be then?

The only hope for the medical man who is not in the employ either of the state or an insurance company, is lost. He is facing the problem his confreres have faced in Europe and his time for action is now. But if he applies to his county society, the one organized body to which he can appeal, what is the answer? Contract practice is not ethical.

The time has come and the need is urgent that every medical man must join his county society and see that immediate action is taken for the protection of himself and those dependent on him.

H. B. A. KUGELER.

THE INDUSTRIAL COMPENSATION ACT.

The state law which went into effect January 1st and which provides for the care, treatment and compensation of an injured employe, touches our profession immediately and in many essential ways, for obviously, an injured person must be treated by a physician as soon as possible and thereafter attended by a doctor until he is well. Two quite interesting meetings were held, one in December in Oakland, the meeting of the Alameda County Medical Association, and the other in January, at the San Francisco County Medical Society; the former was addressed by Mr. Pillsbury, of the commission, and the latter by Mr. French, of the commission, and by Dr. Morton Gibbons who has been appointed the medical officer at the head of the insurance feature of the act. A number of points of great interest were brought out at these meetings. Under the law, the employer has the right to call or designate what physician shall treat the injured person; when the employer has insurance, this right is transferred to the insurance company. The patient has nothing to say about it. The commission has very wide powers to adjust difficulties and differences that may arise and it is admitted, unofficially, that possibly in some instances the patient may be permitted to have something to say in the matter of his physician. The commission state that the vast majority of accidents are trivial and that the employed and injured person is not kept from his work for more than two weeks; for this reason no compensation is allowed for that period of time and unlimited medical or surgical attendance may be provided. Arrangements have been made by many, and are being made by all the rest, of the insurance companies, with hospitals and with physicians to do this accident work at special rates. Naturally, the amount of these proposed rates is a question of great interest to all concerned. The commission states

that the amount to be paid physicians for their work should be commensurate with the income of the injured person; that the charge should be what he ordinarily would be charged by the doctor if he had to pay the bill himself and not have it paid by the employer or the insurance company; there seems a good deal of reason in that contention. Many of the companies—some sixteen or more, we believe—have formed a schedule of fees that seem to be very much too low except as applied to the very poorly paid, if we are to consider the matter as being measurable by the amount of wages or salary paid to the injured employee. Many physicians have been asked to sign a blank contract-form agreeing to accept these fees and to undertake to do the accident work for the company at these terms. The state insurance department has not taken this course of action and has not asked the physicians whom it has approached on the subject to sign any such contract; they intimate that the fees which their company (for the state has gone into the insurance business on the same general lines as any company and so may be referred to as such) will pay will be, in most cases, higher than those indicated by the other companies. It would not seem wise, therefore, for any of our members to sign contracts at the present time. It is not reasonable to expect a good surgeon to set a fractured arm or leg for \$12.50 and to treat the patient thereafter for \$1.00 per. Furthermore, there is nothing in the law to prevent the injured person from suing the doctor for alleged malpractice, if he chooses, though he may not sue the employer. It looks very much as though a good many such suits for damages against doctors would be brought as a result of this act, and as the State Society defends its members in these suits, it would seem to be very wise to consider whether the Society should accept for membership, or at least defend any suit against, a physician who contracts to do this work at these small fees.

OTHER PROBLEMS BROUGHT UP.

Furthermore, is it fair to divert the practice that would naturally go to the family physician, to some physician who has entered into these contracts? And what is to be the position of the doctor who is called in an emergency and first treats the patient? It might be serious if not fatal to keep an injured person waiting without treatment until the services of the particular physician of some particular insurance company could be secured. The commission has unofficially stated that the reasonable bill of a physician for his emergency work will undoubtedly be allowed. That is good for the state insurance company, but can the other companies be forced to take a similar line of action in dealing with the first-aid physician? The powers of the commission are large and it is believed that they can force the other companies to do so, but the point is uncertain. How is this act going to influence the contract-practice evil, already too vicious a one and growing? Will employers demand that their employees become members of some one of the hospital associations that furnish medical and surgical treatment (of its kind!) for one dollar a month, and not go to the expense of taking out

insurance? Will they demand that one seeking employment shall be thoroughly examined as to his physical fitness before giving him a job? Several large employers of labor have already instructed their employees that they must be examined and that no one not absolutely sound physically can be retained in their employ. Many a man is not quite sound physically but is well enough to do the work he is engaged upon, even though his unsoundness makes him a little more likely to be the subject of an accidental injury, trilling or otherwise. Just how this act is going to work out, it is of course impossible to say. Indeed there are many points upon which the commission is itself in doubt and which only the future can solve. There are some things, however, that we can accept as almost certain: this form of state indemnity and insurance has come to stay, in one form or another, and the best thing we can do is to try and mold it better and not endeavor to oppose it. It would also seem to be pretty clear that it will tend to increase the contract-practice evil and so it is essential for us to consider this in its relation to the State Society and membership therein.

INDUSTRIAL ACCIDENT LAW.

(Speech in part of Will J. French, Commissioner of the Industrial Accident Commission, delivered before the San Francisco County Medical Society on Tuesday evening, January 6, 1914.)

Mr. Chairman, Ladies and Gentlemen: Mr. A. J. Pillsbury, chairman of the Industrial Accident Commission, is, unfortunately, on the sick list this evening, and he has requested me to keep the appointment to discuss with the members of the San Francisco County Medical Society the new compensation law which became effective on the first day of this month.

The National Council for Industrial Safety estimates the number of killed and injured in the industries of the United States each year at 2,035,000. Just think what this means! Every hour 232 workmen killed or injured; every 15 minutes a workman killed; every 16 seconds a workman injured. These stupendous figures are corroborated by Doctor Frederick L. Hoffman, perhaps the leading statistician of the country, and W. J. Ghent, also an authority, believes they are conservative indeed.

No one can depict what this waste of human life and energy means, because no man's life can be accurately measured in terms of dollars and cents, and the loss to the Nation is so great that it is high time the best thought available was directed toward a solution of the loss. When it is believed by careful students that nearly half of these deaths and injuries could be prevented, the loss on the ledger of social efficiency is even more striking than a first glance at the figures might indicate.

BIRTH OF THE COMPENSATION MOVEMENT.

A few years ago a group of men and women investigated some of the causes of poverty in our industrial centers. It was found that industrial accidents and their consequences came third on the list, preceded by sickness and unemployment. The

next logical thing to do was to ascertain how other countries are combating this third cause. It was found that nearly every country of Europe has a compensation law of some sort, and that the same applies to the Australasian lands beneath the Southern Cross.

It would take too long to attempt to describe these laws. Suffice it to say that Germany, as usual in social legislation, has led the way down through the years, and that the people most backward in passing laws and endeavoring to stop the human waste live beneath the Stars and Stripes. But it has not taken long to arouse an intelligent interest, and to-day nearly thirty states either have compensation laws or are planning their adoption. The Federal Government is considering two bills designed to care for the dependents of the killed, as well as for the maimed, in the employ of Uncle Sam. One of these proposed laws will undoubtedly soon be engrossed on the statute book, and that will mean an advanced forward step and have a tendency to bring about a much-desired condition, namely, uniformity in the legislation adopted by the states.

THE ONE WORD THAT TELLS THE DIFFERENCE.

Frequently those of us who talk on this subject in public are asked what is the difference between liability and compensation. As you know, liability laws preceded compensation laws, and now the tendency is to depose liability and substitute therefor compensation. One word in the English language tells the story. That word is "negligence." Under the old system the injured worker had to prove his employer responsible in some way for the accident, either directly or indirectly. This might be accomplished directly because of unsafe surroundings, the breaking of machinery, or in other numerous ways there was a possibility of showing immediate connection. Indirectly the same result might be attained by reason of the carelessness of a fellow worker or the abolishment by law of the employers' defenses of "assumption of risk" or "contributory negligence."

LIABILITY CONDEMNED.

There isn't a man or woman who has given the least thought to the question before us who doesn't think that it is high time to install compensation. Liability represents the crude way. It is devoid of equity. Millions of dollars are paid out to the wrong men in the form of premiums for protection against lawsuits. And there ought to be no lawsuits. They are costly, represent delay, friction between employer and employee, and an uncertainty of outcome that handicaps both sides. There is no telling what a jury will do. Many times a heavy award has been given for a minor injury, and a small amount for a major injury. So acute has become the situation that unless a lawyer is able to make arrangements with an injured man, the latter will almost invariably accept a trifle to escape a vexatious condition and to provide food for those of his household. It must not be forgotten that in the great majority of industrial accidents it is impossible to prove negligence, even though it may exist, and absolutely no claim is then

WHY COMPENSATION?

Because it is sane. Because the world experience points the way. Because it is the natural medium of transferring the cost from the shoulders of the widows and little children and the crippled to the industry, which is not only infinitely better able to stand the strain, but which should because bone and muscle is an element in production heretofore not taken into account, excepting in the very rare cases when success attended a suit in the courts under a liability law. Another good reason is that negligence is abolished, and all accidents are considered as incidental to business, unless employers are guilty of wrongful acts or the employees are injured by reason of intoxication or wilful misconduct. And still another excellent reason is that the millions paid by employers for protection in the courts will not be needed for that purpose and nearly all of the money will find its way into the pockets that need it most, and both sides will prefer this change. There are so many other reasons that time will prevent their recital.

THE ATTITUDE OF THE PEOPLE OF THE STATE.

That there is a pronounced opinion in California in favor of a change from employers' liability to workmen's compensation is evidenced by the vote on October 10, 1911, when proposed amendments to the State Constitution were submitted to the people. By a vote of 147,567 for, to 65,255 against (a majority of 82,312), this section was added to Article XX:

"The legislature may by appropriate legislation create and enforce a liability on the part of all employers to compensate their employees for any injury incurred by the said employees in the course of their employment irrespective of the fault of either party. The legislature may provide for the settlement of any disputes arising under the legislation contemplated by this section, by arbitration, or by an industrial accident board, by the courts, or by either, any or all of these agencies, anything in this constitution to the contrary notwithstanding."

THREE INTERESTING VIEWS.

In industry a broken piece of machinery is repaired, while an injured man is usually replaced. President Woodrow Wilson, in his latest book "A New Freedom," says it is our duty to "humanize industry."

The New York Court of Appeals has declared that "the inherent risks of an employment should in justice be placed upon the shoulders of the employer, who can protect himself against loss by insurance and by such addition to the prices of his wares as to cast the burden ultimately upon the consumer; that indemnity to an injured employee should be as much a charge upon the business as the cost of replacing or repairing disabled or defective machinery, appliances or tools."

Dr. Gustav Stresemann, a former prominent member of the Reichstag and a well-known economist, has just returned to Germany after a tour of the United States. Here are his words: "The

conditions in most American factories in respect to safety are simply horrible, and any German factory inspector would be astounded if he could observe the dangers to which the majority of workmen are exposed."

THE NEW LAW.

The Boynton Workmen's Compensation, Insurance and Safety Act, Chapter 176 of the Laws of 1913, superseded the Roseberry law on January 1, 1914.

COMPENSATION.

The new way of computing compensation, which will be compulsory, excepting for agricultural pursuits and household domestic service, is based on the nature of the physical injury or disfigurement, the occupation of the employee and his age at the time of injury. This will give some men more money than other men, according to the schedule based on the three essentials referred to. In addition, there is provision for pensions, at a reduced rate, for those who are permanently and seriously hurt and who are unable to follow their vocations. In order to meet this extra cost, which affects very few men, the compensation payments will not begin until two weeks after disability. The Roseberry law provided for a waiting period of one week. It is believed the addition of the extra week will pay fully for the pensions of those who have been eliminated from the industrial field.

MEDICAL.

The Boynton law requires full medical and surgical attention for injured wage-earners for the first ninety days. The theory of this section is that compensation may be saved if the injured person can be restored to efficiency as speedily as possible, and, outside of that, there is the humanitarian viewpoint that considers each man or woman engaged in industry as a national asset.

SAFETY.

The Safety Department of the new law is elastic in administration, following the Wisconsin plan. Hearings will be held at which both employers and employees will be represented, in conjunction with the safety experts of the Industrial Accident Commission, and afterward there will be issued rules, orders or regulations requiring preventive measures that will reduce the number of casualties in the various occupations. Wisconsin employers and employees have found this new way very satisfactory. It insures co-operation between all those interested and the Commission has authority as binding as law after the hearings have been held. Common sense and good judgment can both be used to advantage in protecting machinery and making places of employment safe.

Mr. C. H. Crownhart, Chairman of the Wisconsin Industrial Commission, was asked for his opinion of the safety provisions of the Wisconsin law, which have been in force for more than two years, and as there is little or no difference between California's safety law and that of Wisconsin, Mr. Crownhart's telegram is valuable at this time:

"Employers fully satisfied with safety and sanitation provisions of our law and manufacturing

associations are against their repeal. The Commission, by detailed investigation with expert help, is able to meet needs of employers intelligently. Instead of imposing burdens on employers we help them to save money. Employers realize this and we have their hearty co-operation. Our method has taken factory inspection and safety work entirely out of domain of politics and put the department on a purely business basis. Wm. George Bruce, as Secretary of the Milwaukee Manufacturers' Association, in a public speech said: 'I am safe in saying the work of industrial safety and sanitation of Wisconsin, which has been progressing in a most successful manner, has the good will and support of the manufacturing of the State.'

"C. H. CROWNHART,

"Chairman Wisconsin Industrial Commission."

INSURANCE.

Important indeed is the State Compensation Insurance Fund. The only practicable way for employers to protect themselves and to add the cost to the business is by carrying insurance. Realizing this, there are provided four methods: first, the State Compensation Insurance Fund; second, the regular insurance companies selling compensation coverage; third, mutual or interinsurance companies; fourth, the employer to carry the risk himself. These methods are optional. The object of the State Compensation Insurance Fund is to sell coverage at a fair rate that will make sure that the injured men and women receive all that the law calls for, and will also have the advantage of reasonable cost for employers.

Insurance rates are based on not only the hazard of the industry but the way that plants are safeguarded. The employer who installs all the protective devices possible, who places safety rails at the head of openings in floors and who takes all the numerous other precautions that are not only advisable but necessary, will be charged a lower rate than will the man who is careless in these respects. This means that there will be a premium for the careful and humane employer, and the cost of his installations for the protection of his employees will be repaid by the lower rates charged. The indifferent employer who is neglectful will have to pay a higher price for his insurance. As premiums are always based on the hazard of the industry, the prime object is to prevent all the deaths and all the injuries possible. This object is good for the nation, for the state, and it certainly should appeal to every man and woman, regardless of relations in industry.

STATISTICS.

Statistics will be carefully collected under the Boynton statute, so that the public may secure all the information possible concerning the industrial-accident situation. Not only will the facts and figures gleaned prove of general interest, but the insurance rates are based on the hazard of each industry, which makes accuracy in the Statistical Department especially important as regards cost.

In California during 1912 there were reported more than 600 deaths of an industrial nature. In 1913 the number of deaths was over 800. The statistics for each year convince the Industrial Ac-

cident Commission that fully 25,000 industrial accidents take place during the twelve-month period. More than one-third of these deaths and accidents are preventable, and each such death or accident constitutes a crime against society and inflicts grievous wrongs on individuals.

APPEALS.

Appeals may be taken from decisions of the Industrial Accident Commission to either the Supreme Court of the State or to the District Court of Appeal.

ATTITUDE OF THE COMMISSIONERS.

You will be interested to know that Mr. Pillsbury, Colonel Weinstock and I have sought for our appointive associates on the Industrial Accident Commission the most competent men and women we could find. From Stanford University we were successful in coaxing Professor Ira B. Cross of the Department of Economics to become our Secretary. C. W. Fellows of Los Angeles was chosen to head the State Compensation Insurance Fund. From Pennsylvania will come John R. Brownell to the important position of Superintendent of Safety. And last, but by no means least, we have for our Medical Director a worthy member of an illustrious house in the medical history of California—Dr. Morton R. Gibbons (applause). These men have not been asked their political affiliation. The Commissioners desire to administer the law in as creditable a manner as possible, and by introducing the merit basis we trust to achieve that end.

OF IMPORTANCE TO THE MEDICAL PROFESSION.

No group of men or women is more desirous of preventing the spread of disease and lengthening the span of human life than your fraternity. And to your credit be this said. To a layman it might seem that you would profit financially should sickness predominate in our community life, but the attitude of doctors the world over places the profession on the highest plane.

It is needless to ask the same splendid co-operation in facing the industrial-accident problem in the State of California. We know that this assistance will be given. The law will have to be tried out, but its sponsors know that all its provisions have been tested elsewhere and have not been found wanting. The members of the Commission will be glad to receive your suggestions for changes in the statute and to secure your unanimous support in administering it during the year ahead.

Naturally, to doctors too much emphasis cannot be laid on the medical and surgical sections. Other states provide unlimited attention for a given period of time. California sets the time at ninety days. The reason for this is that the best and cheapest form of compensation is to rebuild the injured worker regardless of cost. If there is a maximum, there may be a tendency not to furnish the most desirable attention. This best care is cheapest because when the man returns to his employment in the physical condition he would wish, compensation payments cease. The attractive part of the plan is that one of the state's citizens

engaged in productive work resumes his labors. So everybody wins when an industrial accident is mended well and expeditiously.

About this time the thought may come as to the relation of the doctor to his well-earned fee. The answer is that under compensation there will always be a fee for services rendered, while under liability the fees were few and far between because no provision was made for the large majority of injuries, owing to the absence of negligence.

As in Massachusetts, we propose to have the payments based on what would be charged the injured men and women should they have to pay the cost out of their own pockets. This is entirely a fair proposition. It is what you do right along. You take into consideration the financial ability of the patient to pay. If you did not continue this system under compensation, and charged the state and employers generally what "the traffic would bear," the result would be that the medical cost would be top heavy and the whole scheme would fall to the ground. Experience in other states shows that the cost per accident is not high.

We have consulted the best doctors in San Francisco, men whose names are known all over the land. They assure us that we are right in our position, and that the profession will endorse our stand.

Finally, aid us by cheerfully reporting on our blanks all industrial accidents. This may take a little time, but the aim is to find out everything possible about the entire subject, and you are just as much interested in that as we are.

I have to thank you for your courteous attention and for this opportunity to address you on a subject of importance to all.

MEETING OF THE MARIN COUNTY MEDICAL SOCIETY.

January 15th, 1914, 8 p. m.

The meeting was opened at 8:15 p. m. by Dr. O. W. Jones, President.

The following members were present: Dr. Howitt, Dr. Sullivan, Dr. Stowe, Dr. F. Hund, Sr., Dr. H. Hund, Jr., Dr. O. W. Jones, Dr. W. F. Jones, Dr. Dufficy, Dr. Dudley, Dr. Stone, Dr. Kuser and Dr. Mays.

The business of the meeting being a discussion of the Boynton Act and its consequences upon the medical profession of the state.

Motion was made and seconded to induce the State Society to make a fee list acceptable to the members of the State Society, it being the opinion that lay people should not take it upon themselves to regulate the fees of the medical profession.

Motion made and seconded that the members of this society will strictly adhere to the fees that have been in vogue in this county for years, and that the time-honored principle of the patient being allowed to choose his own physician should be absolutely adhered to.

There being no further business the meeting adjourned at 10 p. m.

A. H. MAYS, Secretary.

ORIGINAL ARTICLES

A PLEA FOR THE IMMEDIATE OPERATION OF FRACTURES.*

By CHARLES G. LEVISON, M. D., San Francisco.

That the open treatment of fractures is now an accepted procedure is no longer disputed, and it is being rapidly adopted by those surgeons who were formerly most violent in their opposition. One point of the controversy as to whether fractures should be operated *immediately* or whether operation should be *delayed*, is still unsettled, and is the "raison d'être" of this paper.

Before entering upon the discussion of the operation, it must be emphasized that immediate operation should under no circumstances ever be attempted by anyone whose technic is not absolutely perfect, for the remarks that follow here are only intended for those operators whose surgical technic is above reproach.

The peritoneum on account of its liberal lymphatic anastomosis, is known to be the most tolerant structure to infection in the body, and experience with this tissue is no guide to the method that must be followed in immediate operation for fractures, for here the parts are very vulnerable and prone to infection. Recent hemorrhage with traumatized tissue offers a good pabulum for the growth of micro-organisms and it is obvious that a recent fracture is very liable to infection, so that it remains a point well taken by the opponents of operation who recognize the possibility of infection.

In answer to this opposition it is shown by Mr. Lane's experience, which I can confirm, that with the strictest attention to detail, infection can practically be avoided. Opponents to immediate operation maintain that 5 or 6 days at least, should be allowed to elapse for by this time the lymphatics are plugged or cofferdammed and the localized leukocystosis makes infection less liable.

The following, in my opinion, is of great importance in reference to immediate operation. In a paper¹ published two years ago I expressed the belief that the displacement of fractures is not due to the normal contraction of muscle such as has been generally maintained, but that the first deformity is due to the trauma and that reposition of the fragments if immediately carried out, is easy, the contraction of the muscles playing but a minor role. This observation is confirmed in the daily experience of every surgeon having to do with fractures, where it is seen that the difficulty of approximating the fragments increases in direct proportion to the time following the accident; in other words, the longer the time that is allowed to elapse the more difficult approximation becomes; this difficulty is due to the fact that the contraction is not one of normal muscular contraction, but that it is the result of the coagulation of the blood that has escaped into the tissues which produces an induration of the muscles and soft parts that makes manipulation of the bone difficult.

It should be mentioned in discussing the indica-

tions for immediate operation in fractures that only those fractures that have been produced by *indirect violence* should be operated. Fractures complicated with great traumatism to the tissues should not be operated immediately.

Experience has shown that when a fracture is operated upon immediately after it has taken place, the fragments are easily approximated as stated above, and if one has not had the experience it is surprising at the ease with which this can be done. As a consequence a smaller incision is made than is the case when the operation is performed later; as a result there is little traumatism of the tissues and less manipulation is necessary, which diminishes the tendency to infection.

Treatment of Compound Fractures: The consensus of opinion regarding this class of fractures is that there should be no operative interference, and that conservatism should be observed. Even if reduction is not possible operation should be performed at a later date, 15 days being the average time. My belief is that if possible, the wound should be allowed to heal *entirely*; the fracture can then be treated by operation in the usual way without any danger of infection; this procedure has been advocated by me in an earlier paper² which discussed the treatment of compound fractures of the tibia.

It must be emphasized that under no circumstances should a compound fracture be explored; the finger or instrument should never be introduced into the wound, but this should be given a first aid dressing and not disturbed further; when this is done it is astonishing how quickly these wounds heal as compared with the infected wounds that are so frequent when manipulation and exploration have been carried out.

Indications for Operation: It should be understood that operation is not advocated for every fracture, but only for those fractures which cannot be treated in the usual way. It has been repeatedly stated by numerous writers that there are many fractures that can be satisfactorily treated without operation, and there is no intent on my part to enlarge the indications for operation. There are, however, a certain class of cases and these form a large percentage of the fractures in which although an ultimate successful result is possible to obtain without operation, nevertheless there are factors of importance in this connection that must be considered, for example:

Given a laboring man with a fracture of the middle of the femur: In this form of injury a very good result is possible to obtain if it is treated by the conservative method but the period of convalescence will be much longer than if operation is carried out. As perfect approximation is the *exception* instead of the rule, the convalescence is delayed in proportion to the size of the callous formed, which is naturally dependent upon the apposition of the fragments. On the other hand with operation, approximation with primary union and little or no callous formation is obtained so that besides the rapid convalescence, the freedom from apparatus that must be constantly watched

* Read before the St. Francis Clinical Society, San Francisco, April 25, 1913.

when extension is applied, is a very serious consideration that cannot be ignored. Another example is a patient with a fracture of the upper third of the femur with marked displacement as is usually the case; this requires constant attention for six weeks to obtain anything like satisfactory approximation and to overcome the shortening. During all of this time the patient is probably confined to his bed.

Compare this with an operation properly carried out where a cast is applied at the end of the first operation and which is allowed to remain for at least three weeks; the first dressing is done without any discomfort and subsequent dressings cause no annoyance. My experience has been that if the patients are given an intelligent idea as to the comparative merits of the procedures, there will be few patients who will not choose the operation.

The Bardenheuer method of treating fractures is an excellent one and when carried out by the originator the results are beyond criticism, but there is so much difficulty and detail associated with the proper application of the method that it becomes impractical in the majority of institutions, as well as with most patients. My impression is that Bardenheuer has a class of patients to deal with, who submit to his treatment with a much easier acquiescence than is the case in this country.

Time of Operation: Up to this time the most of the supporters of the open operation delay for 7 to 15 days before interfering on account of the danger of infection; by this time the muscles and tissues have contracted and have become so fixed that the replacement of the fragments becomes quite difficult and approximation which would have been easy during the first 24 hours has been converted into a procedure where a much greater amount of manipulation and trauma becomes necessary. Callous formation commences after ten days which complicates the situation.

Lane was one of the first to advocate immediate operation and I have followed his practice and am of the opinion that an operation when carried out under perfect technic is practically free from the danger of infection. This together with the ease with which approximation can be produced and maintained as compared with the operation performed at a later period offers the strongest argument in favor of the procedure.

Details of the Technic:

1. Lane's Dictum.
2. X-Ray.
3. Hemostasis.
4. Skin Disinfection.
5. Skin Protection.
6. Incision.
7. Approximation and Fixation of Fragments.
8. Drainage.
9. Closure.

As the success of the operation is entirely dependent upon attention to the smallest details, these will be separately considered.

Lane's Dictum: "There should be no handling of the tissues whatever."

Experience has shown that practically all fractures can be reduced with instruments and at no time is it necessary to introduce the finger into the wound.

Gloves are always worn and the finger should not be introduced into the wound as there is great danger of the glove finger being punctured by a spicule of bone. Our experience is that this is not an exaggeration of technic for the same results are not possible to obtain by any other method.

After a little practice it is surprising how readily operations can be performed with instruments. As no blood vessels are tied the finger is not introduced for this purpose. The muscle layers fall together readily because the fibres are generally only separated. The incision is made in the line of the extremity and in these regions there is little tendency on the part of the fascias to increase the width of the cicatrix so that these tissues are not sutured; if it is necessary to unite the fascia as in supra-condylar fracture of the humerus or fractures of the femur, catgut can be used and the sutures tied with clamps. The skin is brought together with Michel clips which can be applied without manual contact.

X-Ray: It is axiomatic that the diagnosis of fracture should be made by means of the X-ray. The routine examination is not accompanied by any manipulation of the fragments. This point is in direct opposition to the views of many surgeons who advocate conservation, for they maintain that the diagnosis should be made before the patient is submitted to the X-ray. It is essential that a correct diagnosis should be made prior to the operation; any procedure that necessitates the handling of the fragments must be productive of harm, so this can only be avoided by the X-ray and as it is well known that even the most skilled diagnosticians frequently find it impossible to make a correct diagnosis in this chapter of surgery, why waste unnecessary time in the attempt?

Hemostasis: Hemostasis is not employed in the majority of fractures. The operation with the "Esmarch" may be easily performed but the secondary oozing due to vasomotor paralysis permits the accumulation of fluid to a much greater degree than if the bandage is not employed and as drainage is never used it is important to limit any accumulation of serum. There is one fracture, in my opinion, in which the employment of the tourniquet is recommended, and that is the spiral fracture of the tibia. This fracture is at times so difficult to reduce that hemostasis is thought advisable as it makes a clear operative field and hence avoids the introducing of the finger. The bandage should always be applied before the skin is disinfected for if it is used after disinfection of the skin, contamination becomes easy. Long-handled Oschner hemostats may be applied during the operation; with their sharp bite the blood vessel is generally occluded. Ligatures are never used so that there is no necessity to introduce the hands into the wound for the purpose of tying ligatures.

Skin Disinfection: In the majority of fractures the patients are dirty and require a considerable amount of cleansing before anything surgical can be done. If possible the leg should be shaved dry and it should then be scrubbed with a solution of iodine with benzine 1 to 1000; 5% tincture of iodine should then be applied in the usual way. The benzine has the effect of removing the dirt and grease from the skin and it does not interfere with the subsequent disinfecting effect of the iodine as does soap and water, which should never be used.

Skin Protection: The most important part of the entire technic, in my opinion, is the protection of the field of operation against contamination. First the limbs must be covered with sterilized towels which are fastened by hooking them to the skin by means of small vulsella; there is no danger of infection whatever when these are used on the sterilized skin and they fix the towels so that they never slip.

It is important to scratch the skin with a sharp needle to mark the situation and the length of the contemplated incision. If the towels have been attached to the skin, the landmarks and the position of the fragments have been obliterated, and as handling of the skin is prohibited it is essential to know where the incision is to be made; this is shown where the skin has been scratched in a very satisfactory way.

Napkins must then be attached by vulsella close to the skin scratch, so that only a small area of skin is visible on each side of the scratch, then the incision is made over the scratch without touching the skin with the hand; this incision is carried through to the muscle; gauzes are then attached to the fascia by four-pronged right-angled vulsella in such a way that they do not go through the skin so that this structure is entirely excluded from the field of operation. In this way micro-organisms that may be forced out of the upper layers of the skin during any manipulation are not thrown into the wound but are absorbed by these gauzes.

I believe that it is largely due to this part of the technic that we are able to obtain such perfect results, for it is well known that the majority of our wound contaminations come from the skin.

Incision: The position and size of the incision is determined by the skin scratch.

Length of Incision: It might be stated epigrammatically that the shorter the time after the accident that the operation is performed, the shorter will be the incision.

Approximation and Fixation of Fragments: The following principles should be observed in the proper approximation of the bone fragments.

1. The plates in general use for recent fractures (with the exception of vanadium steel) are much too thick. Proper approximation can only be accomplished by mobilization and extension which permits the fragments to come together. The plates are really intended to act as splints and

should not be expected to maintain approximation by their great thickness and tensile strength.

2. In order to obtain perfect approximation the fragments remain together without any displacement, then the plate is applied. As there is no tendency on the part of the bone to displacement if satisfactorily reduced, the plate is not subjected to any strain. These remarks apply only to recent fractures where mobilization is easy.

3. With the patient on the pelvic elevator and with a perineal upright that causes counter-traction and extension of the leg by means of mechanical traction that gives a steady pull, plating of the bone is easy and hardly any of the instruments advocated to hold the bone in position are necessary. The subsequent dressing and plaster spica is easily applied as the patient is not resting on the table so that there can be no shifting of the bone as is frequently the case if the patient is lying on the table under extension, for the bone is apt to slip with the movements of the patient during the time that the plaster bandage is being applied.

The subject of plates and screws and the apparatus used in the operation for bone fracture will not be taken up.

Drainage: This should never be employed. Experience has shown that it is not necessary and there is always danger of infection in the track of the tube. With the bone in position and a firm well applied plaster bandage the pressure is equalized so that healing is perfect without any accumulation of serum.

Closure: There is no necessity to bring the muscles together by suture as the incision is always made in the direction of the muscle fibres which fall together when the wound is closed.

The periosteum need never be sutured and even if this is attempted, experience has shown that it is frequently impossible to suture this structure satisfactorily.

With the incision made longitudinally, the fascia even if it is not sutured, shows no tendency to cause widening of the scar so that all that is necessary is to close the skin with clips which obviate the necessity of introducing the hand into the wound.

References:

- 1 Observations Upon the Open Treatment of Fractures, Surgery, Gynecology and Obstetrics, February, 1911, pages 162-65.
- 2 Treatment of the Spiral Fractures of the Tibia, California State Journal of Medicine, May, 1913, page 188.

A NEW TREATMENT OF POLIOMYELITIS.*

By D. H. MOULTON, M. D., Chicago.

In presenting this paper to you, I wish to offer for your consideration that which seems to me to be of great import at the present time.

We all know from our observation and from our readings what terrible afflictions the recent

*Read before the Sacramento Society for Medical Improvement, December, 1913.

edipemic of poliomyelitis have wrought upon the babies and children and even adults of this and other countries. We see the effect of this dread disease all about us and aside from plaster paris, braces, and operative procedure, we have been almost powerless to help the little ones, and restore them to normal, so that they might take their respective places in the great caravan of life and be normal, useful men and women.

It is estimated that there are over a million children in the United States growing up somewhat deformed as the result of this disease; and now the light seems to be shining through the clouds of uncertainty, which have always hung over these cases.

At the Rockefeller Institution which I visited last year, a great work is being done; trying to get a serum or antitoxin or vaccine to prevent this disease in its advance on our children. At the institution I saw numbers of little sufferers in the fever stage and later these same little ones were sent to the different orthopedic hospitals to be worked upon with plaster and braces; and later sent out into the world as incurable.

There seems some hope now for the little ones, and the object of this paper is to present to you an outline of this rational treatment and urge you to give it a trial and give the babies the benefit of it, for many have been cured and many more will be restored to normal by its use.

Last month I spent in Chicago with Dr. Roy Bernard, the father of this treatment, and many cases he showed me, convinced me that there was truth and merit in the treatment. Case after case I visited, talked with the parents of the children who had had great deformities, and saw them cured and normal. This treatment to be sure is in its infancy, but from the records of cures, I believe that every child afflicted is entitled to the treatment. It is not claimed that every case presented will be cured, but the percentage of cures of cases already treated is so large that I repeat, "Every afflicted child is entitled to the treatment."

It is not my desire to go into the symptoms, etiology, bacteriology, or even the minute pathology of this disease; suffice it is to say that we are still ignorant as to whether the results of this disease are produced by the direct presence of the micro-organism in the nervous tissues or indirectly by means of a toxin. Osler says, "It is clear from the behavior of the ganglion cells, that these are not specifically susceptible to the influence of the virus, but rather suffer from the effects of inflammatory changes in surrounding tissues."

In some of the fatal cases, live cells have been found in the cord at the point of inflammation. Working along these lines, Dr. Bernard figured that if some means could be applied to nourish these cells of the gray matter of the spinal cord and brain stem, there would be a regeneration of the axis cylinder processes and a growth of the atrophied muscles.

Realizing that the severe inflammatory process

in the cord has caused many adhesions, with a resultant lessened blood supply, it seemed plausible to get a method to attempt to break up these adhesions and yet, not do any more damage to the cord. It was found that by the actual stretching of the cord, this could be accomplished; and the remarkable cures which I have witnessed were brought about by this simple, yet scientific method. At first weights and pulleys were used, but two cases showed hemorrhage, which proved that the shock was too much for the cord. After much experimenting it was found that the best results were obtained by suspending the body with the support just above the affected portion of the cord. In cases of lumbar affection, the support is applied over the 9th, 10th and 11th dorsal, which corresponds to the largest part of the lumbar enlargement of the cord.

In case of cervical affection, the support is applied over the 2nd, 3rd, 4th and 5th cervical vertebrae, so that the extension will be at the 6th cervical, which corresponds to the largest part of the cervical enlargement of the cord.

The technic of the treatment is very simple, but must be carried out carefully, and it must be understood that the longer the time elapsed between the onset of the disease and the beginning of treatment, the slower the results. But if there are any remaining cells at all, you may certainly expect good results. The treatments are given every 2nd or 3rd day and it may be necessary to cover a longer period of time; that is, several months. Some of the cases develop after the first few treatments, a return of the initial symptoms: high fever, vomiting and diarrhoea. In these cases it was found the results were very rapid and the child made quick recovery.

In case the legs are involved the treatment is given at the lumbar enlargement, the belt being fastened so that the groove in back of the belt fits over the 9th, 10th and 11th dorsal, the rings in front of the belt should be in the mammary lines. When the child is suspended the belt acts as a fulcrum and we get the extension at the proper place. For the first minute the child is allowed to hang quietly, during which time there is first a natural resistance of the muscles, followed quickly by a complete relaxation; as soon as this relaxation occurs the body is swung forward and backward so as to get the bend at the 12th dorsal, then slightly from side to side, always supporting the child with one hand on the back of the belt. This should be done for two or three minutes.

In treating cases where the arms are involved the extension of the spine should be at the 6th cervical vertebrae. Have the patient lie on back, place your fingers on each side of the spinous process of the 2nd, 3rd, 4th, and 5th cervical vertebrae, making an extension that will almost move the weight of the body from the table for from one-half to one minute; or to get more extension, stand in front of the patient, place the tips of your fingers on the transverse processes of the 2nd, 3rd, 4th, and 5th cervical, gently extend the cervical region until the patient is

lifted from the floor, gently throwing the junction of the cervical and dorsal; this makes the extension of the 6th cervical, which is the largest part of the cervical enlargement of the cord. Swing the patient gently forward and backward, then from side to side for one-half minute.

The object of the treatment is to obtain an increased blood supply to the involved areas, which naturally aids absorption and stimulates vasomotor function. This in turn nourishes the cells, with a resultant regeneration of the nerve and a growth of the atrophied muscles.

In closing I wish to give a few brief histories of a few of the many cases I saw last month.

1. Julia Ur, age 18 years, onset January 6th, 1913. Right leg completely paralyzed with atrophy, including the hip muscles. Treatment began March 5th. The muscles of the leg have been entirely restored and the gluteal muscle has filled out to normal.

2. T. B. Girl age 3, onset Sept. 8th, 1912. Treated at Cook County Hospital for two months without any improvement. Treatment commenced Nov. 15th, 1912. Some motion was noticed three weeks after. Could walk two months later and was pronounced cured in three months.

3. J. B. C. Boy age 3, onset July 28th, 1912. Atrophy of both arms and legs. Legs drawn up in flexion. Treatment commenced May 1st, 1913. After 11th treatment muscles of legs relaxed. Could walk well and use arms by Aug. 1st, 1913.

4. Catherine E, age 11, onset August, 1907. Extended foot. Left leg atrophied and foot taliped. Treatment commenced Jan. 25th, 1913. After third treatment toes relaxed; after twelfth treatment general improvement. After sixteenth treatment could jump rope. Was pronounced cured April 12th with all motions normal.

5. Virginia M. (my own child). Onset Sept. 28th, 1910. Paralysis of all muscles of right leg below the knee and of quadriceps extensor above the knee. Treatment commenced Sept. 18th, 1913. Has now had about 20 treatments and much improvement is noticed.

I now have a clinic at my office in Chico at which I am treating a dozen cases, and some of these cases have shown a marked improvement during the month I have been treating them.

I will be very pleased to instruct any physician who might care to visit my clinic, so that he might treat his own cases at his own office.

SURGICAL COMPLICATIONS, TREATMENT AND PREVENTIONS.*

By C. P. THOMAS, M. D., Los Angeles.

The life of an active practitioner of surgery is not, as is supposed by some, one of constant bliss and sunshine, for in addition to the enormous amount of mental strain he is under while actually operating, because of the gravity of the cases he undertakes, and the risks to which he must submit both himself and patients, he must be constantly on the outlook for the unexpected to follow in the way of complications, many of which, so far, I believe, are unavoidable. Rapid, uninter-

rupted recoveries are so frequent after operations that I fear we sometimes forget the grave and serious conditions that may occur.

I will endeavor in this brief paper to outline some of the more common unfortunate complications which may occur and a few means of prevention.

Admitting that every preliminary precaution has been taken in advance of the operative procedure, in the way of careful examination of the physical conditions, of the urine, feces and blood, etc., nevertheless any of the following unforeseen complications may occur:

1. Death from Anesthesia.
2. Death from Acute Nephritis.
3. Death from Pulmonary Embolism.
4. Regional Death from Arterial Thrombosis.
5. Death from Hyperthyroidism, from an Unrecognized Graves' Disease.
6. Death from Hemorrhage from the Mucous Membrane of the Alimentary Tract.
7. Phlebitis, With or Without Suppuration, With Possible Death.
8. Parotiditis, With or Without Suppuration.
9. Acute Dilatation of the Stomach.
10. Acute Gastritis.
11. Pneumonia, or Acute Hypostatic Congestion of the Lungs.
12. Non-Union of Bones or Soft Tissue.
13. Cystitis and Pyelitis.
14. Post-Operative Hernia.
15. Delirium Tremens.
16. Unrecognized Lesions.

During the past twenty years, the writer has had at least one patient with each of the above-named complications, and some of them have been seen many times following some surgical procedure, which may or may not have been severe, and he will endeavor to describe them briefly, with suggestions for their prevention and treatment.

1. *From Anesthesia.* In 1897, I lost a large, bony miner from chloroform, less than one drachm having been administered, on an open mask, and before the operation had been begun. He had been on a protracted spree, was in poor condition for the anesthetic, and was suffering from tubercular osteitis.

I thereupon abandoned chloroform and have since used gas and ether exclusively. I have had ether administered to patients in large numbers, with severe heart lesions, and to others who had chronic nephritis, without its producing any apparent increase in the heart or kidney trouble. Spinal analgesia has but a limited field of usefulness and Crile's combination analgesia may yet be more generally adopted.

2. *Acute Nephritis.* This has followed surgical procedures, regardless of the anesthetic used, in a small percentage of cases. Some have been severe with complete suppression, and have died; others less severe and have recovered. I am of the opinion that nephritis can best be avoided by keeping the patient and operating room warm and free from

* Read before the Los Angeles County Medical Association, October, 1913.

drafts; making the operation as short as possible; giving the least amount of anesthetic that is consistent with good work; doing as little manipulating as possible of the intra-abdominal organs and providing ample drainage for infected cavities to prevent absorption.

Good team work on the part of the surgeon and his assistants is also absolutely essential to avoid the frequent occurrence of this complication, and such work can not be maintained if he be an infrequent operator, or is constantly changing his assistants or place of operating. A thoroughly trained anesthetist should be a part of the team.

3. *Pulmonary Embolism.* Death from this complication has occurred several times; once on the fourth day after a vaginal hysterectomy; once on the second day following a compound fracture at the ankle joint; once following perineal prostatectomy, and other deaths have occurred in which it was believed, but not proven, that this condition existed. I have no suggestion for prevention.

4. *Arterial Thrombosis.* This caused complete obstruction of both popliteal arteries once, following vaginal hysterectomy. Both legs became gangrenous from the knees down; the patient was too weak and anemic to permit double amputation, and died from exhaustion a few days later. I have no suggestion for prevention of this complication.

5. *Hyperthyroidism.* This has been observed a few times, coming on a few hours after some superficial operation in which there was no possibility of unseen hemorrhage, and with no other complication, death usually taking place the second or third day. During recent years, since the diagnosis and treatment of Graves' disease have been more thoroughly understood, I have had no trouble from this source.

6. *Mucous Membrane Hemorrhage.* Persistent vomiting of blood, and melena, have claimed three patients from me, following simple abdominal operations. All of them had been operated for fairly severe appendicitis. The treatment of the appendix stumps was such that the hemorrhage could not possibly have come from that source. The hematomesis came on in two of them but a few hours after operation, and death in about eight hours.

The third one came on the twenty-first day after the operation, and the post-mortem showed the blood to have come from the entire mucous tract. Authorities differ as to the source of alimentary tract post-operative hemorrhage, some claiming gastric or intestinal ulcers, others that it comes from simple oozing from the mucous membrane where no ulcer exists. This was certainly the condition in the one we examined post-mortem. The free administration of horse serum to all persons suspected of being bleeders, would probably prevent this complication.

7. *Phlebitis.* This condition has occurred in a small percentage of laparotomies between the eighth and twentieth days, particularly in simply appen-

dectomies with no apparent wound infection, and the left femoral vein is the one usually involved.

The wound infection theory as to the cause of this complication, and the fact that the left external iliac vein differs somewhat, anatomically, from the right in its relation with the artery, is probably the correct one. The early recognition of the complication, with proper treatment by ice bags, rest and elevation during the acute stages, will shorten its duration very greatly. I have never seen this form of phlebitis go on to suppuration, or have a pulmonary embolism, but recovery is often very painful and slow.

8. *Parotiditis.* This complication has followed a number of times. Those recognized early, and treated by ice-packs and early puncture, and which have not gone on to suppuration, have recovered, while those beginning at the end of the first forty-eight hours after a very septic operation, with suppuration, usually terminate fatally.

There are four theories as to the cause of this complication. One, that it is through the sympathetic system, because of the well-known relation existing between the ovaries and the parotid glands. This is, however, scarcely tenable, since parotiditis is an occasional complication of operations not involving the ovaries. Two, that it is a manifestation of a general septic condition. This is not always true, however, since in several cases observed by me, the infection was regional and not general. Three, that of infection through the ducts from the mouth. The mouth is notoriously foul and infective following septic surgical operations and one can easily conceive of an ascending infection thus taking place. Proper care of the teeth and mouth should especially be enforced just before and after the operation. Four, that of metastasis. This is, I think, also a feasible explanation. Traumatism by a careless anesthetist is a possibility.

9. *Acute Dilatation of the Stomach.* This usually comes on the first three days after an abdominal operation, and is a grave symptom, manifested by frequent vomiting of very large quantities, with evidence of great shock and exhaustion, and is apparently unavoidable. Treatment consists of early stomach lavage, sitting posture, enemata to relieve gas from the lower bowel, and heart stimulation. Cathartics are contraindicated for this condition, until after the dilatation symptoms have subsided.

10. *Acute Gastritis.* This condition comes on soon after operation, due probably to swallowing saliva and mucous heavily laden with ether, and has been observed in a number of cases, manifested by severe acid vomiting in small quantities, beginning from thirty-six to forty-eight hours after operation, continuing for two or three days without peritoneal inflammatory symptoms. Treatment consists in stomach washing and the administration of a small dose of morphine and atropine hypodermatically, repeating in five or six hours if necessary. These last remedies are, I believe, the ones to which the greatest credit should be given, morphine allaying the irritability of the stomach

and the atropine lessening the amount of secretions.

11. *Pneumonia and Hypostatic Congestion.* The latter condition has been observed quite frequently, especially in old people who have been submitted to severe surgical operations. They can be best avoided by the sitting posture and frequent position changing. The administration of morphine and atropine preceding the operation which lessens the quantity of ether necessary, and dries up the secretions of the mouth, thus preventing filling of the lungs with mucous discharges, is, in the writer's opinion, a good means of preventing post-operative pneumonia. The stomach should also be empty to prevent vomiting and inhalation of stomach contents. Drafts should be avoided, and the chest, neck and arms be well covered by warm clothing for several days following the operation.

Septic pleurisy, perhaps by metastasis has been observed two or three times following operations for severe pelvic infection, once causing death.

12. *Non-union of Bones.* This is usually due to one or more of the following conditions: Non, or imperfect coaptation of fractured ends; improper immobilization; infection from without or within; syphilis of tuberculosis.

Non-union of Soft Parts. This is generally due either to inaccurate coaptation of tissues, infection, disease of the pancreas, excessive suture tension from hematoma, swelling, carelessness in suture tying, or intra-peritoneal distension, or it may occur in persons greatly reduced by long continued illness.

The writer has had three abdominal incisions open, twelve days after closure. Immediate re-suture with through and through silk worm gut, without anesthesia has been followed by recovery in all, but with one hernia. The writer believes that catgut closure alone of the ordinary abdominal incision without fascia overlapping is insufficient and should be reinforced by wormgut left in ten days.

13. *Cystitis.* This is usually due to careless, rough or unclean catheterization, but is sometimes due to ascending infection, from lack of cleanliness of the vulvar region. Pyelitis is probably secondary to cystitis by ascension, but may be hematogenous. The prevention of cystitis consists in the avoidance of catheterization when possible, otherwise by careful, clean catheterization, followed each time by irrigation with a saturated boric solution. When present, treat early in injecting one drachm daily of ten per cent. argyrol solution into the empty bladder. When due to colon bacillus, Coli vaccine mixed strains should be used.

14. *Post Operative Hernias.* These are due either to infection, preventing primary union, improper coaptation and suture of tissues, including improper suture material; incisions which cut across the muscle fibre instead of along their course, or long lateral incisions which destroy the nerve

supply, causing atrophy of the muscles between the incision and median line.

Excessive muscular action too early may cause hernia, even after good union. The writer has no sympathy with the "very early out of bed and to work" advice of some surgeons, and I believe in the most accurate coaptation of abdominal fascia with figure eight wormgut stitch, without the use too many buried sutures.

15. *Delirium Tremens.* This is not an uncommon complication following operations, even in young persons who have been heavy drinkers. It can probably be best avoided by keeping the patient on a given amount of liquor for the first week after operation.

16. *Unrecognized Lesions.* Several deaths have occurred from alimentary tract stenosis, either malignant or simple, when the operation was done entirely for the relief of some other trouble. At least three patients have died from pyloric or duodenal stenoses which were not suspected before, or discovered at the time of the operation.

Chronic narrowing of any portion of the tract below the stomach, if not corrected, will increase and become more acute after an abdominal operation, because of the general intestinal paresis, stagnation, etc., which invariably follow. The remedy then is reasonably liberal incisions, with careful examination of all intra-peritoneal organs whenever possible, with immediate resort to any steps necessary to remove additional lesions or to correct the deformities resulting therefrom.

One of my objects in presenting thus briefly the above sequela and complications of surgery is to warn the surgeon against promises of sure cures.

The shock to the relatives of a patient who dies suddenly from any of the above complications is always severe, and is much worse if they have been told that there was no danger, and a promise of an early recovery made.

One of America's foremost surgeons said to me early in my career, that life was hardly worth living for a surgeon until his reputation was such that people would permit him to operate without first promising a cure, or making the statement that there was no danger from the procedure.

It is the writer's custom to invariably reply to the question, Is there any danger in this operation? that every operation is attended with some danger, and endeavor forthwith to impress it upon them by stating just about what the death rate is, or has been in his hands from the procedure advised.

We must admit that even operators of the greatest experience, still have these unforeseen complications and deaths, and while, in our time, we will probably not be able to prevent all of them, it is my hope that some of them will be avoided, and that in the meantime our friends of the laity may become so well informed regarding the unforeseen complications of surgery that a reasonable toleration on their part will make the work of the operator somewhat easier.

PRESENTATION OF PATIENTS.

CONGENITAL DISLOCATION OF THE HIP AND EXTENSIVE SKELETAL TUBERCULOSIS.

RADIOGRAM.*

By HARRY M. SHERMAN, M. D., San Francisco.

A. C., aetat 3 years in 1897. Sent to me at that date by the late Doctor Henry Gibbons, Jr. The boy had a congenital dislocation of the right hip, with anterior location of the femoral head. A manipulative reduction was easily done, and proved to be stable. Eight months afterwards, when the boy was up and about, I found a kyphos, evidence of a vertebral tuberculosis. He was put on a Bradford frame for a year, and then was gotten up in a jacket. Four months later he evidenced a tuberculosis of the left hip, and went back on the frame

three years after its appearance it ruptured, emptied and finally healed. From the beginning of treatment for the congenital dislocation to the healing of the spinal abscess was fourteen years, and for the past two years he has been well and gaining in weight and strength.

He has a very short trunk, because of the badly deformed and extensively diseased spine, but he walks well and not without grace. The hip which was dislocated shows—in this radiogram—a short femoral neck and a large femoral head in a broad and shallow acetabulum, but as a joint it has a wide range of motion, and is a strong and useful joint. The hip which was the seat of a tuberculosis shows—on the radiogram—that the femoral head has been destroyed and the femur is high in the ilium, but, again, this limb is strong and useful and has an ample range of motion. The radio-



Right hip shows stable reduction of congenital dislocation. Left hip shows healed hip joint tuberculosis with absorption of the femoral head and a competent limb.

with traction on the hip added. Here he stayed eight months and then was again gotten up and was permitted to use his left leg. He took advantage of this to fall and wrench the hip, and had to be put into a spica-jacket plaster of paris apparatus. In this he did badly and was put back on the frame, with hip-joint traction for another year. Next he was up in a combination brace, a New York Polyclinic type of hip-joint traction brace and a Taylor posterior lever spinal brace. This he wore a year, and when it was taken off he was free from symptoms of active disease and remained so for two years. Then he had a recrudescence in his spine and the spinal brace was put on again, and was worn between two and three years, and during this time he developed a tuberculosis of a pisiform bone of the carpus. This I excised, and the place has remained healed. However, that same year he had evidence of pressure on the cord, and a spinal abscess appeared. I aspirated this several times, but could not control it, and

gram shows the end result of the two major lesions of the hip in children, a congenital dislocation on one side, and tuberculosis on the other—a very unique showing on one plate.

CARCINOMA OF THE RECTUM REMOVED FOUR AND A HALF YEARS AGO; HYPERTROPHIED PROSTATE RECENTLY REMOVED FROM THE SAME PATIENT. METHOD OF AFTER-TREATMENT OF ENUCLEATION OF THE PROSTATE.

T. M., aetat fifty-nine, was sent to me in 1908 by Doctor W. B. Lewitt, having a carcinoma of the rectum. The tumor was annular, 7-8 cm. from the external sphincter, not obstructive nor painful, but it was ulcerated and was bleeding. I operated at the University of California Hospital, doing first a laparotomy for exploration, to see if metastases could be found. As there were none, and as a lymphatic gland which I removed from the pelvis was normal, I did a left iliac colostomy by Ward's method, as described by Moynihan. This was a

* Read before the San Francisco County Medical Society, General Meeting, October 14, 1913.

wholly satisfactory procedure; it made a good spur, and delivered all the feces on the surface, none passing the spur. A week later I did a Kraske, removing the tumor and some rectum, and fortunately the carcinoma only affected about 4 cm. of the rectum longitudinally. In closing, I made an end to end suture of the rectum, and also closed the incision over the sacrum. I think this last was an error, for the wound suppurated and was slow in closing, but through most of the time the man was in active business. When the sacral wound was soundly healed, I closed the colostomy, and the rectum and anus at once resumed normal function, and there has been no interruption for the four and a half years since the operation, and no recurrence of the carcinoma, either locally or by metastasis.

In July of 1913, after an indefinite period of prostaticism, complete retention supervened. The prostate was found enlarged to a moderate degree, the right lobe being the larger. The gland was firm, not hard; was smooth, not nodular, and felt like a normally enlarged organ. Catheterization was difficult, because of a tortuous prostatic urethra; it was only practicable in a surgeon's hands by a silver catheter, and would be quite impossible for the patient himself. For this, and for the reason that I believed his condition after an operation would be far better than it could be if catheter life was instituted, I did an enucleation of the prostate. This was done at St. Luke's Hospital, July 24, 1913. I did a median perineal section; entered the prostatic capsule at the apex of the gland, and easily enucleated each half of the organ. There was no enlarged median lobe. The bladder was washed out on the operating table. I did not pack the wound in the perineum.

That same day there was retention, due to clots in the prostatic urethra, and catheterization was necessary, and then the tying of a soft catheter in the bladder. This was left in three days and then slipped out, and was never replaced. No irrigation of the bladder was practised. No further instrumentation has been permitted.

Some urine passed through the urethra on the eighth day, and on the fourteenth day the wound ceased to drain the bladder, and all urine was voided naturally. The healing of the wounds of incision and enucleation should be called normal healing, and since then function has been normal.

The laboratory reported the enlargement as due to "fibromyoma of the prostate."

There was no sign of malignancy.

The point I wish to make is, that, except for the catheterization rendered necessary by the retention because of clots, there was no instrumentation, and there was no bladder irrigation at any time after the operation.

Alexander used to drain the membranous urethra with a tube. Bryson uses a large perineal tube, and packs in addition, to control hemorrhage. Horwitz used to tie in a catheter. Young uses packing to control hemorrhage, and much continuous bladder irrigation to prevent clot formation. The packing is removed eighteen hours after the operation, and the tubes for the bladder irrigation 4-5 hours later. His perineal wound closes sometimes in five days—frequently in two weeks, and usually in three weeks. Judd drains the bladder with a tube, and notes that, after the removal of the tube, the bladder becomes continent by means of the internal sphincter, even before the perineal wound has closed.

It seems to me that drainage in these cases is unnecessary, except in the case of a post-operative retention, such as I have described. Under all cir-

cumstances I should think tube drainage in these cases is like tube drainage of a tuberculous abscess—a definite invitation to infection. I feel very much the same about the passage of sounds, which is advised and practised by some. It is an unnecessary and therefore a deplorable invasion of a healing wound, leading to a disturbance of parts and easily to infection. Healing occurs normally in these cases, if the parts are let alone, and with a proper perineal wound and urine carrying urotropin, drainage and irrigation are automatic. This is an additional witness to the wisdom of the late George Chismore, who protested against irrigation of the bladder under all ordinary circumstances, and as a routine method of treatment; not so much because of infection as because the patients whose bladders were frequently washed out did not get well.

I add these other cases in which I have followed, in general, the plan of no packing, no drainage, and no post-operative instrumentation:

St. Luke's Hospital. W., aetat sixty-seven, 1908. Transverse curved incision, convex forwards. Enucleation of the gland. No packing, no drainage tube. Some urine through the penis in two days, and more on the fifth day. In this case—done in 1908—I tried to pass sounds, but could not get one into the bladder, and the failure demonstrated the inutility of the sounds. No bladder irrigation was done. The man had control in seventeen days, and had no dribbling after twenty days.

St. Luke's Hospital. T., aetat sixty-five, 1909. Median perineal incision. Enucleation. No packing, no drainage tube, no sounds, no bladder irrigation. Control in eight days.

The Katherine Sanitarium, Santa Rosa. R., aetat sixty-five. Patient of Dr. J. W. Cline, 1912. Median perineal incision, enucleation. No packing, no bladder irrigation, no sounds. Bladder partially continent on the third day; patient urinated on the fifth day, colorless drainage on the tenth day. On the twelfth day, following a stool, he had a hemorrhage from the bladder, and then the wound required packing. This was left in for two days, and four days later he was passing urine only by the urethra.

After the hemorrhage the patient informed Dr. Cline that he had always bled considerably and long after any cut, so that it is fair to infer that he had some degree of hemophilia, and some slight injury, due to the passage of a large stool, had produced an excessive bleeding.

After the hemorrhage was controlled, his recovery was without incident.

I find D. W. Basham, Wichita, Kansas, has written thus on this phase of the subject, in "The Medical Herald," July, 1913:

"If the drainage looks red it is well to remember that a very small quantity of blood will color a large quantity of water."

"Most important of all, the bladder should not be irrigated at all nor at any times during the convalescence. It serves no good purpose to wash the clots out of the bladder. It is distinctly harmful and even dangerous to remove the protective coaguli from the mouths of the torn vessels and open up the field of operation and keep it open by passing a forceful current of water repeatedly through the bladder either from above or below."

"I have now had a sufficient number of consecutive cases treated without post-operative irrigations to prove to my satisfaction that they are not only unnecessary to the welfare of the patient, but that they are actually productive of secondary hemorrhage and are, therefore, fraught with danger."

"There is, as a rule, no need whatever to pass the sound."

Discussion.

Dr. M. Krotoszyner: As regards the differential diagnosis of ordinary hypertrophy and cancer of the prostate my own experience has taught me that

we must not rely too much upon one or even a group of clinical symptoms which apparently point to malignancy. Excessive bleeding, various paresthesias, especially pain radiating towards the lower extremities, severe dysuria, hard consistency and irregularity in the shape and size of the gland, marked cachexia: all these symptoms may either singly or in combination be found in ordinary hypertrophy. While it is true that, under certain conditions, a pretty safe diagnosis of cancer can be made from the clinical observation, I would, nevertheless, warn against overestimating the value of clinical tests from a differential diagnostic standpoint. I recall, in this connection, the case of a colored man whom I had the opportunity to observe several years ago and in whom, on account of excessive bleeding and various paresthesias, I made the diagnosis of cancer of the prostate. The patient was operated upon by Dr. Sherman at the University Hospital; the prostate was shelled out very easily in one piece and presented the type of a benign hypertrophied gland. On account of the uncertainty of the clinical diagnosis, Hugh Young of Baltimore has lately developed the mid-operative diagnosis on an excised piece of the gland. His statement, that a rasping sound made by the knife cutting through the prostate tissue, to be characteristic of cancer seems to be worthy of consideration. I fully coincide with Dr. Sherman in the stress which he laid in his paper upon the avoidance of post-operative instrumentation. Many years ago I treated, in conjunction with the late Dr. Goodfellow, a man of 72, in whom the clinical diagnosis of prostatic hypertrophy was made, which, though, after prostatectomy, in accordance with the pathological report, had to be changed to prostatic cancer. The patient made an excellent convalescence. About three weeks after the operation I passed a steel sound and 24 hours later the patient had a severe chill, several other and severer chills ensued and the patient died within five days under uremic symptoms, the condition probably being due to acute ascending renal infection. Since that time I have never, in the few perineal operations I have done, introduced a metal instrument. I have followed the same routine in my supra-pubic prostatectomies, which I now invariably perform, where I let the wound heal by expectant treatment. Dr. Sherman's remarks upon the late Dr. Chismore's abhorrence of excessive bladder-washes have recalled to my mind many pleasant reminiscences of this genial man and rare physician. Dr. Chismore was an excellent observer, and those of us who were fortunate enough to be thrown into continuous professional contact with him, quite often profited more from his teachings than from the perusal of text-books.

Dr. M. Silverberg: I think it quite advisable in every case of prostatectomy to wash the bladder. If clots be left in, after two or three months—perhaps when you think the patient has recovered except for a persistent cloudiness of the urine—you may be called to see him at night on account of intense burning in the urethra and a persistent desire to urinate, which will finally be alleviated by the passage of a clot; it is very likely to show a calcareous deposit. I think it advisable to irrigate the bladder after every prostatectomy until one may be reasonably assured that there are no clots of consequence.

In regard to packing the perineal wound, I think it becomes infected whether or not you put gauze into it, owing to the proximity of the anus. The structures of the perineum are such, however, that they take very good care of infection and there is little danger.

I cannot reconcile myself to any such broad statement as that the bladder ought not be washed. There are instances where it is advisable; in the tabetic bladder, for example, it is important. After the supra-pubic operation—when more or less ammoniacal decomposition has occurred—I think

the bladder should be irrigated; nevertheless, I think one can safely say that the bladder may be unnecessarily meddled with by the acceptance of a routine of procedure without regard to the peculiar necessities of the case.

Dr. A. Newman: I shall have to confine my remarks to the rectal part of Dr. Sherman's operation. I want to congratulate Dr. Sherman on this case; it is not often that we get carcinoma of the rectum we definitely cure. Unfortunately most carcinomas of the rectum that come to us have lasted too long and the patients are too far gone. Cripps says that out of 380 cases he was only able to do the radical operation on a little more than 20%.

A patient I did a colostomy on recently, showed blood for two years and waited until the entire sphincter was destroyed and the process had extended on to the buttocks before he came for examination. All the cases we get in the City and County Hospital are too far gone for anything but a palliative operation. Dr. Sherman was fortunate in having this patient sent to him in time. In his case he has also preserved the sphincteric integrity of the patient, which is a very good thing. There is nothing more pitiable than a patient cured of his disease, but left miserable for the rest of his life.

Dr. C. G. Levison: Where did you do your colostomy?

Dr. Sherman: A left inguinal colostomy.

Dr. Levison: Did it heal spontaneously?

Dr. Sherman: No. I closed it. The technic of making the colostomy was that of Ward, as given by Moynihan. The spur formation was very satisfactory and delivered all the feces on the surface.

Dr. S. Beasley: Was a histological examination made of the tissue removed?

Dr. Sherman: The rectal tumor, histologically, was an ordinary cylindroma of the rectum, and fortunately, scirrhus.

Dr. C. G. Levison: The question as to whether a preliminary colostomy should be made in the treatment of cancer of the rectum, has never been decided; some operators believe that a colostomy should always be done prior to operation. If there is no bowel obstruction I do not feel that this is necessary. I have described a method in the "Military Surgeon," May, 1912, which is at times very serviceable, more particularly when a colostomy of the small intestine is necessary. Frequently the colostomy does not have a spur sufficiently prominent and as a consequence feces will escape into the rectum so that it is important in cutting off the protruding intestine that the lower end should be more prominent than the proximal end. This is a point that is not generally emphasized in the operation. Another factor in connection with the control of the colostomy is its situation. If a loop of the colon is drawn out through an opening made in the loin a pad can be easily applied over the opening and it can be maintained in position by a belt. This is not possible if the colostomy is made lower down in the inguinal region as it is usually done. The loin or waist line permits the belt to slip into position and it remains here. In this way a colostomy well performed through a muscle splitting operation keeps contamination at a minimum. It is important that a part of the colon should be drawn up into the wound, allowing the slack of colon lower than the colostomy opening; this gives a reservoir effect. The patient has one or two bowel movements a day and the remainder of the time his artificial anus is clean.

A point or two in connection with the diagnosis of carcinoma of the prostate might not be malapropos. In a recent conversation with Dr. Young of Baltimore I elicited from him why he performs the perineal operation in preference to the supra-pubic operation. He stated that as far as the mortality was concerned he performed the perineal operation not because it offered a lower mortality

than the supra-pubic but because it was possible to recognize a carcinoma of the prostate much earlier than is possible by the supra-pubic operation.

He stated that in his experience, which Judd of Rochester confirms, 20% of the prostates are carcinomatous. As carcinoma of the prostate commences in the posterior capsule, which is allowed to remain in the supra-pubic operation; by means of the perineal operation he can recognize this condition earlier, at a time when it can be removed satisfactorily.

I had the fortunate experience while in Baltimore to see this idea carried out. The patient was being operated by Young for an enlarged prostate; he recognized a nodule in the posterior part of the prostate which he had excised and examined microscopically; the report was returned of carcinoma and Young removed the prostate and bladder according to his published methods. The operation impressed me as being exceedingly difficult and it was performed by him in the most skilful manner.

The one point above all that he observed was absolute hemostasis. He removed the prostatic urethra, bladder and prostate up to the trigone. He then closed the bladder which he anastomosed to the membranous urethra.

Dr. Sherman, closing discussion: The patient to whom Dr. Krotoszyner referred I have not included in this list because he had to be turned out of the hospital for insubordination, and the final result was never known. The man had been kept in the hospital for some time before the operation for observation by Dr. Moffitt. The prostate slipped out with remarkable ease, and was not carcinomatous.

As regards the washing of the bladder, the bladder is lined with squamous epithelium, and is merely to contain urine. That kind of a mucous membrane is very resistant to infections, and if drainage is properly arranged for a post-operative infection of the bladder is most unlikely, or, if there is a pre-existing infection it is likely to subside. Washing is superfluous and may implant fresh infection, and so is potentially mischievous. As regards the vesical sphincter, the patient can stop voluntarily the stream when in the act of urinating, but he dribbles a little in the afternoon when he is tired and is on his feet. The competence of the rectal sphincter I think Dr. Krotoszyner could feel when he passed his finger into the rectum.

A CASE OF LUDWIG'S ANGINA.

K. B. Aetat 45. For twelve days before admission to St. Luke's Hospital in 1911 the patient had a sore throat and painful deglutition. At first he continued at work; later he had to stop, and still later he had to come to the hospital because he became quite unable to swallow. Speech was difficult, and dyspnea came on.

On admission his neck was swollen, more on the left side, where the swelling extended from close to the jaw quite down to the sternum. The surface was not discolored, was firm and smooth, and no evidence of fluctuation could be detected. It was not possible to examine his throat, but his tongue was not swollen.

After admission the dyspnea increased, and so I incised the swollen neck. As the swelling reached down to the sternum I made a transverse collar incision just above the manubrium and clavicles, going through the deep fascia and then opening up areolar planes by hemostat dissection, but no pus was found. A second incision was made at the level of the crico-thyroid membrane to look again for pus and, if none was found, to permit a laryngotomy. Fortunately pus was found beneath the left sterno-mastoid; it was foul smelling, as if the bacillus coli communis was present, but the hospital record contains no mention of an

examination. The abscess was tube-drained, and the wounds were both packed. There was an immediate alleviation of the symptoms, but the implication of the pharyngeal muscles and the palate was shown by regurgitation when attempts were made to swallow. Improvement was interrupted on the third day by discharge of blood-streaked pus from the mouth, and on the seventh day the patient coughed up a slough from the throat and one also was removed from the wound in the neck. On this day he could swallow some solid food, and convalescence was then uninterrupted.

A late bacteriological examination showed the presence of the staphylococcus alone. No streptococci were found.

Ludwig's Angina is a condition in which I had become interested without seeing a case of it, and this patient came to supply the needed example. It is a diffuse cellulitis beneath the deep cervical fascia, due in most instances to the streptococcus, but it may be caused by the pneumococcus or the staphylococcus, or a complex kind of mixed infection. The infection atrium is by a carious tooth, or the middle ear or by the tonsil, and the first site of the cellulitis may be in the sublingual space in the floor of the mouth—a sublingual phlegmon—or, more commonly, the first lesion may be a submaxillary bubo in the lymph glands around the sub-maxillary salivary gland. From the sublingual phlegmon, the infection may spread back and down the pharynx, and also into the neck by the space between the posterior edge of the mylohyoid and the middle constrictor of the pharynx. Or from the sub-maxillary bubo the infection may enter the mouth by this same space, and then extend down the pharynx. The infection does not travel by the lymph channels, but by continuity of tissue, and it travels rapidly.

The infection does not at once produce a reaction in the shape of pus, but may be too virulent and too rapid, and so result in calling out only a serous exudate, while the areolar tissue and sometimes the muscles become gangrenous. If the patient lives pus is produced and accumulates under the tongue and beneath the deep cervical fascia. Externally a woody induration is produced with much swelling, so that the tissues of the neck fill up the space quite level from the point of the jaw to the chest, and this may be on one side or on both sides, the condition extending around beneath the mandible from one side to the other. The skin of the neck is usually not reddened, but is tense over the underlying tissues. If the process has begun in the neck the course is longer and not particularly dangerous until the sublingual tissues are affected; then the tongue is lifted and pressed against the roof of the mouth, and it also swells; and so, as the mandible cannot be depressed because of swollen neck, the patient can neither speak nor swallow, while profuse salivation adds to the distress. From the sublingual location the infection spreads down the pharynx, causing edema of larynx or septic pneumonia. If the process begins in the mouth, this end is more quickly reached. As this is a deeply situated lesion, openings do not occur on the surface, but do occur in the pharynx, and so infection may reach the larynx without having passed through the mouth; or, beginning in the neck, and failing to open and discharge into

the mouth or pharynx, the cellulitis may extend into the mediastinum and so cause a septic pneumonia. The effect on the patient is that of a virulent septic infection, plus the interference with the function of the parts involved,—speech, deglutition, respiration—plus, also, the infection of larynx and lungs. Death may come in a few hours from overwhelming sepsis, or later from interference with nutrition and more particularly respiration (edema glottidis), or later yet from septic pneumonia, and it may even occur when the patient is seemingly convalescent, and then is apparently by heart failure.

In Thomas's careful paper (*An. Surg.*, 1908, p. 169), he reports 106 cases, observed or collected; in ninety-two the swelling began external to the mouth and pharynx, and in sixty-one of them it was first noticed in the sub-maxillary region.

Incision in this region, parallel to the border of the mandible, is of prime importance, though a mesial incision from the jaw to the hyoid quite through into the mouth has been advised and practised. The incision must go through the deep fascia or to pus. If it is made early only serum may be found, and gangrenous cellular tissue.

After the supervention of edema of the larynx, tracheotomy will be of very doubtful value, as the trachea would be opened directly into an infected area.

There has been much discussion regarding the keeping of the name "Ludwig's Angina." In 1895 Felix Simon, St. Thomas, London, claimed that acute edema of the larynx—edematous laryngitis—erysipelas of pharynx and larynx—phlegmon of pharynx and larynx and angina ludovici, were all the same thing. This seems to me to be too sweeping a statement, for laryngeal and pharyngeal infection may occur without the cellulitis, or cellulitis may not lead to the infection of the larynx and pharynx.

Thomas advises the keeping* of the name, as indicating a fairly well defined lesion, which is said to be not so rare as my experience would make it.

THE EPIDEMIOLOGY AND CONTROL OF RABIES.*

By W. A. SAWYER, M. D.,
Director of the Hygienic Laboratory of the California State Board of Health.

Rabies is a serious and expensive disease which can easily be prevented by the communities involved. A knowledge of its epidemiology is the only reasonable basis for determining the necessary preventive measures.

Epidemics of rabies display certain features which are explained by the characteristics the disease shows in the individual case. For one thing, there are no prolonged cases or chronic carriers to harbor and spread the disease over long periods of time, as rabies is almost invariably fatal after an illness of from two to ten days, usually

five or six. The diseased animal as a rule spreads the infection only during the few days of evident symptoms, although there is a possibility of transmitting the disease from two to eight days earlier. From this it would appear that an epidemic could be promptly and effectively suppressed if the acute cases could be controlled over a period of a very few weeks. This would be true if it were not for another striking characteristic of rabies—its long incubation period. An interval of complete absence of symptoms occurs between the inoculation and the appearance of the disease. This interval is seldom less than two weeks, usually from one to three months, and in rare instances six months or over. The long incubation period separates succeeding generations of the disease, leading the public to feel that the outbreak is confined to the few early cases, when in reality the disease may be slumbering and preparing to break out in a formidable epidemic.

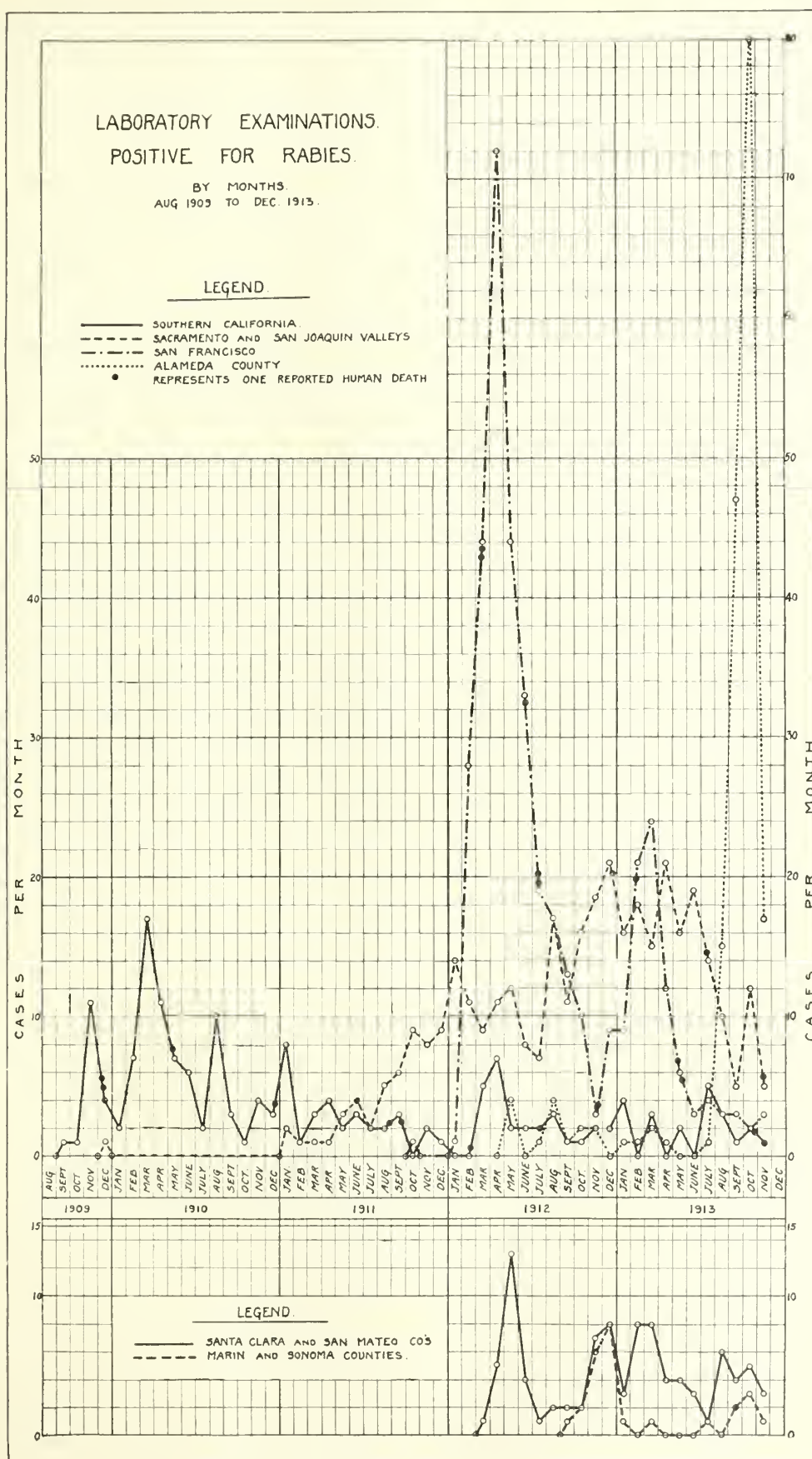
The third important characteristic of rabies from the standpoint of epidemiology is its transmission only through inoculation, and almost entirely through the bites of the diseased animals. This means that the disease can be absolutely interrupted in a period of time determined by the incubation period, if the infected animals can be prevented from biting. The method of transmission of the disease would not explain its perpetuation and extensive distribution if a tendency to snap and bite were not an early prominent symptom in many of the canine cases.

These three characteristics of rabies—the long incubation period, the short period of infectivity terminated by death, and the transmission by bites only—permit a rough prediction of the course of an epidemic and the formation of a reasonable plan for the control of the outbreak. A more accurate prediction, however, can be based on the study of previous epidemics as a whole.

In California we are having an unusual opportunity for studying the epidemiology of rabies. The disease a few years ago made its first entrance into the state, and it has appeared in one community after another, showing its manner of invasion and development in previously uninvaded fields. The courses of these initial epidemics show certain characteristics which permit of generalization and are therefore worthy of special attention.

In the accompanying chart the incidence of cases by months has been shown for several important divisions of California. The curves represent laboratory examinations of the heads of animals with resulting positive diagnoses of rabies. The curves show only a small part of the total

* Read before the San Francisco County Medical Society, December 2, 1913.



number of cases in the state. Certain portions of California are omitted in order to avoid confusion from too much repetition. The chart, being based on laboratory findings, does not show the large number of rabid animals whose heads were not sent for laboratory diagnosis. A considerable number of examinations have been made by laboratories whose reports were not readily available for the entire period and were therefore not included. Although the curves represent only a small part of the cases, the shapes of the curves are nevertheless probably a fair indication of the fluctuations of the epidemics.

In making these curves the statistics of the following laboratories were used: The Hygienic Laboratory of the California State Board of Health and the laboratories of the Health Departments of Los Angeles, San Francisco, Sacramento, and Oakland. Small solid circles added to the curves each represent one reported human death from rabies within the area under consideration, and during the month indicated on the chart.

A few cases of the disease were reported in Southern California before the earliest dates shown by the laboratory records. The curve representing Southern California begins in September, 1909, and shows a sharp rise in November, representing chiefly cases in Pasadena. The next two peaks in the curve coincide with the prevalence of the disease in Los Angeles in 1910. The peak in January, 1911, was caused principally by cases in Riverside. Since then the disease in Southern California has apparently become endemic, with a decreased number of cases in animals and man. The moderate increase in February and March of 1912 occurred in Los Angeles.

The second curve represents the San Joaquin and Sacramento valleys. The first case shown occurred in December of 1909 in Stockton and represents a circumscribed outbreak which showed little tendency to spread. In January, 1911, cases were discovered in the southern end of the San Joaquin Valley. Apparently the sparsely settled mountainous region between the San Joaquin Valley and Southern California had greatly retarded the extension of the disease northward in spite of the railroad traffic through this region. The disease spread rapidly through the thickly populated farming country on the east side of the valley. The summit of the curve in January, 1912, represents the height of the disease in Fresno, Kings and Tulare counties. The increase in cases from August, 1912, to March, 1913, was in part due to cases in recently involved communities in the northern end of the San Joaquin Valley, but

largely to the passage of the epidemic northward into the Sacramento Valley, involving many towns and the City of Sacramento. Now that the disease had invaded the most populous portions of both valleys, it began to decrease. This curve representing many communities is much more gradual in its changes than the curves representing single cities.

In October, 1911, the first case was discovered in San Francisco. In February of the following year the epidemic developed suddenly and in April it reached its maximum. This is an excellent example of the rapid spread of a disease in a region previously uninvolved. The fall was almost equally rapid and was undoubtedly greatly influenced by the measures instituted by the city against the disease. A recrudescence occurred a year later. Since then the number of cases has been small compared to those in neighboring communities.

San Francisco is surrounded by cities and towns, and there is a great deal of travel between them. On all sides but one the traveling is done by ferry and the egress of dogs in these directions is therefore less than if there were no water barrier. The fourth curve shows how the disease spread up the peninsula over the land boundary from San Francisco into San Mateo and Santa Clara counties. There was nothing to prevent dogs from traveling in this direction in considerable numbers, causing repeated invasions of the disease and a correspondingly early and sudden epidemic. The peak of the curve was reached in May, 1912, and was due to the involvement of South San Francisco, San Mateo, Palo Alto and the intervening country. The subsequent rises in the curve represent increases of the disease in the same region.

In all other directions from San Francisco the bay formed a natural barrier and the disease was late in getting a start, although there was much travel over the ferries. In Alameda County, with its population of over 200,000 people, scattering cases appeared in May, 1912, but for three months the disease showed little tendency to reach epidemic proportions in spite of the lack of adequate attempts at control. Suddenly, in August, 1913, this mild outbreak took on the proportions of an epidemic in Oakland, and to a less extent in Berkeley. The maximum was reached in October. Vigorous steps were then taken, greatly aided by the publicity given the situation by the press, and the epidemic very suddenly decreased. The large number of persons and valuable dogs bitten aroused public sentiment and made it possible to suppress the disease. It is needless to say that the outbreak should have been anticipated and prevented, as Oakland and Berkeley had the advantage of observing the experience in San Francisco.

The sixth and last curve of our chart represents Marin and Sonoma counties, north of San Francisco Bay. The disease did not get a good start in these counties until eight months after it became prevalent in the neighboring city of San Francisco, although there is constant travel over the ferries. The maximum of cases was apparently reached in December, 1912.

The cases in human beings are coincident in each area with the presence of the disease among dogs. They represent part of the toll exacted by rabies from communities which permit the disease to exist. Other penalties are the subjection of a much larger number of persons to the expense of the Pasteur preventive treatment, and the loss of valuable domestic animals, including horses, cows, pigs, goats and dogs.

The California experience with rabies leads to several generalizations regarding its epidemiology:

1. When a separate populous community is invaded for the first time there are usually a few scattered cases in dogs, during a period of several months, followed by a sharp epidemic. The subsidence of this epidemic is apt to be rapid, although less rapid than the rise. The fall in the number of cases is partly due to measures taken to suppress the disease and partly to a tendency of the epidemic to spend itself. After the rapid fall, rabies usually becomes endemic in the community and the number of cases is small and fluctuates in an irregular way.

The manner in which an epidemic of rabies partially spends itself is a matter of conjecture. Probably this natural decrease in the number of cases depends upon the death through rabies of a considerable number of those dogs which are most likely to become infected owing to unusual susceptibility, or to special vulnerability due to lack of skill in fighting or short hair, habits of roaming the streets, and lack of discretion in approaching and attacking other dogs. Acquired immunity can scarcely play a part, as the disease when once developed is fatal, and we have no reason to suppose that immunity is produced in nature by rare accidental inoculation of virus too small in amount to produce symptoms.

2. A community contiguous to a heavily infected area, and freely communicating with it, is apt to be plunged suddenly into an epidemic without the preliminary scattering cases. This is probably due to multiple invasion instead of the entrance of a very few cases.

3. A community separated from a nearby heavily infected area by a barrier, such as a mountain, a body of water, or a thinly populated region, even if a large number of people and a considerable number of dogs cross the barrier daily, may escape all but a few scattered cases for many months, but is apt ultimately to have a severe epidemic. The spread of the disease from Southern California over the mountains to the San Joaquin Valley and from San Francisco across the bay to Alameda County and to Marin and Sonoma counties furnishes examples.

4. Areas made up of many separate communities show a more gradual rise and fall in the aggregate number of cases than do single cities. Compare the curves for the San Joaquin and Sacramento valleys with those for San Francisco and Alameda County.

5. The severe epidemics show no predilection for hot and dry months, nor for any particular season. In fact, the Los Angeles and San Fran-

cisco outbreaks reached their maxima in March, a cool season with abundant moisture.

6. The presence of an epidemic of rabies in dogs is almost sure to result in a few human deaths. Note the deaths in San Francisco and Southern California in spite of opportunity for receiving the Pasteur treatment, privately, or without charge from the state. It is impossible to bring all persons bitten under treatment.

7. The spread of an epidemic of rabies in new territory is slow and steady, as if the principal factor were the carrying of the disease by a considerable number of dogs traveling out from the edge of the involved territory on foot. While dogs in the incubation period are taken at times over long distances by railroad, or automobile, or boat, this does not seem to have been the chief method of spread in California. The more dogs passing out of the infected area, the better is the chance that some of them will be in the acute or incubation stages of rabies and that part of these will have the disease in the more dangerous furious type and will inoculate many animals. That the progress is slow and steady is illustrated by the fact that it took over a century for rabies to cross the continent to the Pacific Coast, and over three years for the steady march of the epidemic from the southern to the northern end of California.

CONTROL.

If the California epidemic of rabies was so steady in its spread that each community could anticipate its arrival, why were not the well-known and effective measures of control applied to prevent the involvement of the great central valleys and the large cities? It is true that the course of the epidemic was well known and was freely predicted by the State Board of Health, and advice was given regarding the best methods of control. While this was helpful in keeping down the number of cases in special communities, the effect on the situation as a whole was slight. It takes so long to get special action against disease in our American towns and cities that the disease usually becomes established before action is taken, and the epidemic is only palliated, not prevented. Then, too, the measures are usually applied in a half-hearted, ineffective manner which keeps down the number of cases without stopping the outbreak. The more successful the control the less apparent is the need for it, and as public support lessens the action of the authorities becomes more difficult and less effective. The usual experience in California was, therefore, no action until the disease appeared, much discussion and half-hearted action during the critical period when the early scattered cases were discovered, fairly effective control when the disease was at its height, and a relaxation of effort as soon as the epidemic had diminished. Under even these circumstances the results would have been much better had it not been for two factors which acted specially to prevent the eradication of the disease in communities. In the first place, measures were usually discontinued in less than six months after the last known case, usually within a few weeks. This was due to a failure

of the authorities and the public to appreciate the full significance of the long incubation period.

The second of these important factors is that the attempts at control involved areas so small that even complete eradication of the disease would be followed by reinvasion from the surrounding country. To overcome this difficulty the State Legislature in 1913 enacted a law putting the direction of the control of rabies under the State Board of Health and compelling local authorities to carry out the provisions of the act. As rabies is a disease of large areas it should be fought by concerted action under the direction of a central authority.

The methods of control which have been found efficient are essentially as follows, and will be found embodied in the regulations of the State Board of Health:

1. All cases of rabies should be promptly reported to the local health authority for investigation and action.

2. Animals under suspicion of having rabies and all dogs which bite human beings should be taken up and confined separately under observation for a minimum period of ten days. These animals should not be left at their homes as they often bite the people who care for them, and not infrequently escape.

3. Dogs which have been bitten by rabid animals should be killed if their value is not sufficient to warrant their being immunized. Confining such animals under observation for two or three weeks does not give protection, as the incubation period is usually longer than that and is often several months in duration.

4. When persons have been bitten by rabid animals the wounds should be cauterized at once, preferably with nitric acid. Then the animal should be captured and kept under observation for ten days. It is not good advice to recommend the killing of the dog so that its brain can be examined. If the dog is killed and the microscopical examination is negative, the diagnosis is still in doubt. On the other hand, if the dog is kept alive a provisional diagnosis can usually be made within twenty-four or forty-eight hours, and if the animal remains well for ten days, rabies is disproved.

5. If a dog which has bitten a person has been killed or has died under observation, the head should be removed and sent to a municipal or state laboratory for examination. The Hygienic Laboratory of the California State Board of Health from the beginning of the epidemic in 1909 up to December 1, 1913, made 758 examinations for rabies with positive results in 613 cases.

6. If a person has been bitten by a rabid animal so that the skin is broken, or if the saliva of a rabid animal has entered a fresh break in the skin, the Pasteur preventive treatment should be administered as soon as possible. Provision for this has been made in California by the State Board of Health, which administers the treatment free at eight laboratories. This treatment is available to persons who are unable to pay the cost of antirabic

treatment without undue hardship and who bring the recommendation of the local health officer. Persons who are able to pay for the treatment are expected to procure it from their physicians, who can purchase the virus from commercial biological laboratories. The State Hygienic Laboratory has manufactured and administered treatment to 322 persons in the seventeen months preceding December 1, 1913, and previous to that time it administered virus from the Hygienic Laboratory at Washington, D. C., to 103 persons. The Cutter Laboratory kindly furnished us the information that they had sold treatment for 207 persons in California during the twelve and one-half months before December 1, 1913. When we consider that other firms are selling virus in California, we can see that the number of persons bitten by animals known to have rabies, or suspected of it, has been large. This indicates the necessity for adequate measures against the disease.

7. On the first appearance of rabies in a community measures should be instituted to protect the public and to eradicate the disease. These should include the destruction of all ownerless dogs, diminution in the number of dogs through a license tax, the muzzling of all dogs free on the streets, adequate facilities for taking up, impounding, isolating, observing and destroying dogs, investigation of all reported cases by someone competent to give advice regarding treatment and the destruction of animals which have been bitten, arrangement through the State Board of Health for the institution of measures in neighboring areas, and, if necessary, quarantine against dogs.

In closing, I wish to protest against the shooting of dogs on the street, except in emergencies where there is an actual and immediate danger. With suitable provisions for a pound, dog-catchers and wagons, there is no need for noise and disorder and bloodshed in the suppression of rabies.

In all cases the measures should be based upon a thorough knowledge of rabies and its epidemiology, and special pains should be taken to spread such knowledge among the general public.

A POSITIVE READING MANOMETER FOR THERAPEUTIC PNEUMOTHORAX.

By EDWARD VON ADELUNG, M. D., Oakland.

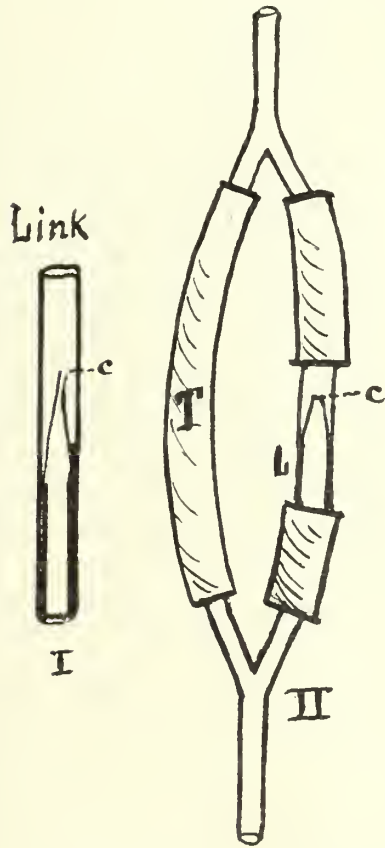
Artificial, or therapeutic, pneumothorax cannot be safely done without careful guidance by the manometer. The reading of this gauge is of prime importance. As is well known, the fluid in the manometer is in constant motion because the intrathoracic pressure is constantly changing, due to the patient's breathing. Some operators record maximum readings, and some record minimum readings. Both of these figures vary more than the figure that represents the *mean* pressure. I am therefore here advocating the recording of *mean* pressures as more accurate.

I wish to call attention to a simple attachment for the manometer, attachable to any form of manometer. Its use secures a non-oscillating mean pressure registration.

The device is shown in Figure 1. A capillary

tube is fixed in a larger tube for protection, so that pressures must reach the manometer through the small opening *c* of the capillary tube. This link (or any device that forces registration through a minute aperture) is placed in one limb of the divided tube leading to the manometer as shown in Figure 2. By pinching off the rubber limb *T* all pressures are forced through the link *L*. When *T* is pinched off the manometer will register the mean pressure, either positive or negative, *unobscured by oscillations*.

The writer believes that the adoption of this device would render the records of all workers uniform in their meaning—something much desired.



One unfamiliar with this device might immediately object that it is very undesirable to do away with the oscillations because they are the very thing needed for safe work, inasmuch as free oscillations are the best indication that the needle is in the pleural space. The reply is that all that is necessary to be done to obtain this information is to leave *T* open, when the usual oscillations will occur. Thus both uses of the manometer are readily available.

- This device offers the following advantages:
1. Ease of reading, oscillations being abolished.
 2. Uniformity of records, mean pressures only being recorded.
 3. Protection of manometer against overflow when patient coughs or strains.
 4. Greater accuracy, inasmuch as the mean pressure varies less than either maximum or minimum pressure.
 5. Simplicity.

LOS ANGELES COUNTY MEDICAL ASSOCIATION.

Annual Report for the Fiscal Year Ending December 18, 1913.

To the Members of the Los Angeles County Medical Association:

Your Secretary-Treasurer begs leave to submit the following report for the forty-third year of the association, ending December 18, 1913:

PART I.—REPORT OF THE TREASURER.—FINANCIAL REPORT.

The financial report of the association for the period, December 19, 1912, to December 18, 1913 (with the cancelled check stubs, receipted bills and ledgers, for the inspection of the auditing committee), is as follows:

A.—Maintenance Income of 1913.

Total first half year dues.....	\$3672.00
Total second half year dues.....	3636.00
Special assessments	1779.00
Miscellaneous	11.00

Total all income, 1913.....	\$9098.00
Carried over from 1912.....	156.61

Grand total all income during 1913.....\$9254.61

B.—Maintenance Expenses of 1913.

1. Paid assessments to State Society.....	\$2508.00
2. Envelopes and postage.....	331.16
3. Printing bills	1070.90
4. Hall rent	145.00
5. Refreshments at regular meetings.....	474.26
6. Clerical expenses	766.94
7. Miscellaneous	33.95
8. Telephone exchange	482.19
9. Prosecution of Illegal Practitioners....	1186.94
10. Special expenses	1319.94

Special Expenses Subdivided.

a. Annual meeting banquet.....	\$ 461.17
b. Christmas jinks (music, costumes, etc.)	320.17
c. Tellers	15.00
d. A. M. A. Journal subscriptions for newspapers	30.00
e. Stereopticon: Dr. Murphy's address	6.00
f. Ear, Nose and Throat Section annual allowance	43.00
g. 12 copies of "Nostrums and Quackery"	10.40
h. Collection books	341.90
i. Postage on collection outfits....	24.40
j. Film to illustrate Dr. Tait's address	2.90
k. Annual allowance, Pasadena Branch	65.00
l. (Prescription blank outfits will be charged against next year's budget.)	
	\$1319.94

Grand total all expenses during 1913 was.\$8319.28

Summary, 1913.

Grand total income.....	9254.61
Grand total expenses.....	8319.28

Balance in treasury.....\$ 935.33

PART II.—REPORT OF THE SECRETARY.—GENERAL REPORT ON THE STATE OF THE ASSOCIATION.

The year 1913 may be said to show a continuation of the progress which has marked the career of our Society in recent years.

1. **Membership.** The total number of members

for whom we paid assessments to the California State Society was 622. The figures show that the Los Angeles Society has doubled its membership in the last eight years. Our Society continues in 1913 as the largest county medical unit in the State of California.

While the number of men who have been dropped for non-payment of dues is larger than we would wish, the number is, after all, by no means to be construed as excessive. There have also been a number of losses through transfers, resignations and deaths.

It was thought in 1910, immediately after the A. M. A. meeting, there would be a big loss in our membership, because it was believed that many new members entered at that time simply to participate in the A. M. A. Los Angeles meeting festivities.

Time has shown that this was an error, and that the members whom we have enrolled in recent years, have largely been of a permanent character.

It is not to be wondered at, if in an organization of over 600 members, that there should be a loss every year of a certain number of members, because this is the experience of almost all kinds of social and other organizations.

Nor is it to be wondered at that a number of men neglect to keep up their financial obligations to the Society, as is evidenced by reference to the bulletin boards of social clubs, where a large number of names are almost constantly posted for non-payment of dues, etc.

In view of the tremendous advantages, which accrue to every man who is a member of our Society, there is little reason for withdrawal simply from the standpoint of dues.

And to-day, under the rules of the Society whereby a member automatically cuts himself off from membership through non-payment of dues, we are in a far better condition than we were ten years ago when the dues were considerably less; but when even well-to-do members would permit their dues to become delinquent for five or six years; and at which time it was necessary also to usually send out a lay collector at the end of each year, at a cost of 25 to 50 per cent. commission, to try to collect delinquent dues. Certainly no man is entitled to the large number of benefits such as accrue from membership in our County and State Societies, unless he is willing to pay his just pro rata of the expenses of the upkeep of those organizations, which exist, not only for the sake of maintaining scientific societies, but for the purpose of having organizations of high standards and ideals to protect our individual professional interests.

2. New Members for 1914. Some time in January, there will be mailed to every member an application blank, and it is hoped that all will respond to the request that an effort be made to place these blanks in the hands of fellow practitioners, whose training and professional careers give indication that they would make desirable members in the Los Angeles County Medical Association.

The advantages of membership, as enumerated below, should give all members sufficient argument and reasons for asking any desirable practitioner to put in his application to our Society.

In calling the attention of such prospective members to the advantages of membership, the following advantages, which all fair-minded persons must agree are far more than an adequate return for the \$15.00 annual dues, may be kept in mind.

1. Society Membership Advantages.

The annual dues give membership in:

A. **The Los Angeles County Medical Association.** (This Association holds two meetings every month,

excepting during the summer months. The scientific papers and the informal luncheons at the end of the meetings, afford splendid opportunity for the development of professional and fraternal features.)

B. **Medical Society of the State of California.**

C. **Eligibility to membership in the American Medical Association.**

Note: No doctor can become a member of the A. M. A. who is not a member of his State Society.

2. Material or Money Advantage Returns.

A. **Malpractice Defense.** (Through the State Society, every member of the County Medical Association, who pays his dues promptly, is defended from malpractice suits, and is given as efficient defense as can be purchased through a private policy in a private company for \$15.00.)

B. **The Telephone Exchange.** (The members of the Society will gradually appreciate that this is one of the biggest things that the Los Angeles County Medical Society has ever done—and its value to the community and to the members of the ethical profession cannot, in fact, be estimated—but there will be far greater advantages than 80% of the members even now appreciate.)

This exchange is open day and night, and without charge, will permit any patient or any doctor to get into communication with any physician who is a member of the Los Angeles County Medical Society at a minimum of time and effort. Use it freely.

C. **The Collection Bureau. Outfits.** (Similar outfits cannot be purchased in the open market for less than \$3.00 a set, and many outfits far less desirable, cost as high as \$10.00 a set.)

D. **Prescription Blanks.** (That seal leather case and the prescription blanks with carbon pages, cannot be purchased in the open market for less than about \$3.00.)

E. **The State Medical Journal.** (This Journal presents all of the papers that are read at the State Society meetings, and gives the news of the California profession.)

F. **The State Register.** (This register has the name of every licensed physician in the State of California, and places the names of members of the County Society in black faced type.)

G. In addition, each member receives the **County Bulletin** which keeps the men in touch with what is going on locally; and there is usually some of the standard literature like "Nostrums and Quackery," etc., which is published by the American Medical Association.

Leaving out of all account the great value that comes from affiliation and membership in a recognized society of ethical practitioners and the pleasure that comes to every man who wishes to do his individual part in the collective development of his group, there are then these dollar and cent advantages, which can easily come up to a total of \$40.00. If there is any man in the Society who can show a single other organization which, for the dues which he pays, gives him as many compensatory returns as the \$15.00 dues of the Los Angeles County Medical Association, that man is certainly to be congratulated.

Members should not, therefore, feel any hesitancy at all in asking prospective men to make their applications for membership.

Our Society should work constantly toward the goal of having enrolled in its membership every desirable practitioner of medicine in Los Angeles County. Every such practitioner is wanted and needed, but all who are not desirable, should be severely left alone. The Society cannot profit to

any material extent by taking into its corporate body those who can neither appreciate the advantages of membership or the ethical principles and spirit that have inspired the formation of county medical societies throughout the United States.

3. Scientific Meetings. Our scientific meetings during the last year have measured up to the standards of previous years, though the secretary will not discuss whether or not those standards are as yet idealistic. The point is, that if there are any members in the Los Angeles County Medical Association who can present better papers, or could help improve the character of the scientific papers, then the fault for nonpresentation of such papers must rest, not upon our Society, but upon such individual members; for a general, as well as specific invitations, have been extended again and again to all members of the Society to give full co-operation in the matter of scientific programs.

Your secretary, among his other duties, has charge of the program, and he wishes publicly to thank the members who have kindly co-operated in the presentation of papers and clinical reports.

During the coming year it is the intention to vary the type of meetings somewhat by having at the Los Angeles County Hospital, a meeting about once every two months, when patients and specimens can be presented.

In this connection, an earnest plea is made to all members to lend more co-operation in the future than in the past, by presenting case reports, or specimens, or patients, at our regular meetings.

4. Branches. Among our geographical branches, the Pasadena Branch continues to hold first place. Our colleagues in Pasadena seem to have solved, with a certain degree of success, the matter of close union of all the desirable practitioners in that community.

Their branch continues to hold scientific meetings of value and interest, and they seem to have a local "get-together" feeling, that works well for the benefit and advancement of the entire Pasadena profession, and of that of surrounding towns.

Our Pomona Branch, though smaller, likewise continues to do very efficient service, and the programs which that branch has presented to our Los Angeles City Branch from time to time, are sufficient indication of the activity and capacity of our members who live in the Pomona Valley.

Our Santa Monica Bay Branch moves steadily forward, although it is handicapped somewhat by having a fewer number of members to draw upon, who live scattered about.

In Long Beach, a city of about the same size as Pasadena, our branch for some reason or other, seems to lack the snap which characterizes our colleagues in the foothills. It is hoped that during the coming year our members at Long Beach will again align themselves together in solid phalanx and take up again the work of organized medicine as a branch of the Los Angeles County Medical Association, in real earnest.

Concerning new branches, it was hoped that such an organization might perhaps be formed with the city of Monrovia as its center, but the time does not seem ripe for this.

5. Collection Bureau Outfits and Book on Collections. A complete outfit of our gummed collection slips and insert blanks, was mailed to all members during the year 1913, and the Society also purchased and sent to every member, a copy of Mr. White's Collection Book, in the belief that these books, while not necessarily of value to every member, would be of suggestive value, and would be worth the money expended, and of value to the majority of the members of our Association.

6. Copies of the "A. M. A. Journal" to the Newspapers. A matter of minor expense, and yet one not without some value and importance, we hope, was the sending, by our County Society, to the six daily newspapers of Los Angeles City, of current subscriptions to the "Journal of the American Medical Association."

We all must acknowledge that the newspapers only too often present faulty and distorted reports of medical topics. It was believed that the "Journal of the American Medical Association" in the libraries of these papers, would be an aid to the more intelligent conception of the purposes of organized medicine, and to that extent would be of benefit.

7. Constitution and By-Laws. Among other data sent out were copies of the Constitution and By-Laws of the Society. This new edition was printed so that all members might familiarize themselves with the rules and regulations of the Society. This Constitution and By-Laws was modeled after that of the A. M. A., when it was organized years ago, and whatever defects it may have, it must be acknowledged that with our own County Society, as with the State Association, and the A. M. A., the progress during these later years since the reorganization, has certainly been immeasurably greater than under the old loose system of organization which existed in previous years.

8. Malpractice Defense by Our State Society. Los Angeles County continues to be the cause of the greatest expense of any county to the State Association, as far as the defense of malpractice suits are concerned. Several of our local suits have cost the State Society over \$2000.00 each.

We do not believe that this larger proportion of suits in Los Angeles County is due to greater incompetency of the Los Angeles profession, because a study of the training and career of our members, shows that they measure above the average of practitioners of medicine. We must look upon these suits as an expression of fadism and antagonism, which exists to a greater or lesser degree through the ignorance and bias of medicine in the State of California. Because of the increased expense of these suits, it was necessary for the State Society to ask that \$2.00 more be given in the future than in the past into the State treasury.

It need only be repeated here, what has been so often stated in our Bulletin, that the State Society means to make absolutely reliable the State Malpractice Defense, and we of Los Angeles have certainly reason to take pride in this State Medical Defense and what has been accomplished.

9. Prosecution of Illegal Practitioners. During the last year our Society has spent over \$1200.00 to aid in the prosecution of illegal practitioners. This expense was incurred by the action of the Society itself at its regular meetings in a desire to help protect the public from unscrupulous and pseudo-practitioners of medicine and surgery.

The question has come up, however, and has been presented by a number of members of our Society, as to whether or not our organization, which is primarily a body organized for the development of scientific and professional standards, should go out of its way and become an active participant in doing work that belongs, not to us any more than to any other group of citizens of the commonwealth, but rather to the paid officials of the State, whose duty it is to look after all violators of the law of the State and of our cities.

On that account, it is quite probable, since the new State Board of Medical Examiners will be in a more independent financial condition than in the past, that during the coming year, our participa-

tion in the prosecution of illegal practitioners will take on a less active form.

10. Our County Medical Association Telephone Exchange. Quite the largest proposition that our Society inaugurated during the last year is our County Medical Exchange. The purposes of this Exchange and the work which it hopes to accomplish, and which we believe it will most splendidly carry out, have already been explained in some detail in the Bulletins of the Society. It is not necessary, therefore, to go over this subject again.

We believe that when we meet a year from now, that any who are skeptical concerning this proposition, will have been amply convinced of its exceeding great merit. Of course, there may be a few individuals who will find little use for this Exchange; but since it will help in the upbuilding of the professional interests of the great majority of the members, there is ample justification for its existence.

It is to be remembered that in this connection, as in all other things that are done for our Society, that not a single proposition can be brought forward that will benefit every member to exactly the same extent. All that can be done is to advocate and to inaugurate those measures which work for the upbuilding and betterment of interests for the majority of the members.

11. Prescription Blank Outfits. The last Bulletin contained a cut of the prescription blank form which is being printed, and an outfit of which will be sent to every member of the Society. If these prescription blank outfits did nothing more than relieve the members of our Association of the odium of using blanks with advertisements of drug stores, that in itself will be a great advance.

In addition, there is the additional good that will come from having virtually all of the members of our Society use prescription blank outfits arranged for carbon copies. We are all believers, we take it, in the efficiency of carbon copy blanks; and it is only through neglect, as a rule, that we fail to keep them up. These blanks will help all of us to be more exact in this respect.

The third great good that will come from these outfits, will be the education of the druggists and the public concerning our Telephone Exchange.

We are certain that when these outfits are received by members, that they will be the subject of real satisfaction and pleasure.

12. Bulletins. Little need be said concerning our County Society Bulletins. The effort has been made, as heretofore, to use the Bulletins as a means of keeping members of the Society in touch with one another's work.

We are too large an organization to ever get together, all of us, at one time, and some means of local intercommunication, such as the Bulletin, is necessary, if the members, who are widely scattered over this very large county of ours, are to be kept in sympathetic professional touch one with the other; and because of that need, we believe the publication of our Bulletins to have been justified.

Conclusion. In conclusion, your secretary-treasurer desires to thank all of the members of the Society for the co-operation that they have given him in his work.

It must not be thought the task of caring for the executive details of an organization having 600 widely scattered members, and with the large number of activities that our organization maintains, an insignificant one. The good that can be accomplished, through our collective efforts to strive for those things that make better the standards we all love, is sufficient compensation; and this is particularly so when one can appreciate that the

great mass of the members are willing to co-operate to the fullest possible extent within their power, in the work of increasing the power and influence of the Los Angeles County Medical Association.

We make our usual apology to any whose feelings we may have hurt. If any such instances have occurred, it was against our wish and desire. Your secretary-treasurer, therefore, thanks you all for your kind co-operation and willingness to aid him in his duties.

Respectfully submitted,

GEORGE H. KRESS,
Secretary-Treasurer.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Section on Medicine, Tuesday, December 2, 1913.

1. The Epidemiology and Control of Rabies. W. A. Sawyer (by invitation).
2. The Diagnosis of Rabies in Animals. Karl F. Meyer (by invitation).
3. The Treatment of Rabies, Prophylactic and Curative. W. H. Kellogg. Discussed by R. G. Broderick, J. C. Geiger, G. H. Evans and J. Rosenstirn.

ANNUAL MEETING.

Tuesday, December 9, 1913.

1. Remarks on Gastro-Intestinal Peristalsis, with Cinematographic Demonstration. Dudley Tait.
2. The Treatment of Typhoid Fever. William Fitch Cheney.

Section on Surgery. Tuesday, December 16, 1913.

1. The Treatment of Flat Foot. A. L. Fisher. Discussed by L. Ely, J. T. Watkins, H. M. Sherman and E. Rixford.
2. Fractures Near to and Into Joints: II. Fractures Into Joints. Harry M. Sherman and Dudley Tait. Discussed by E. Rixford, A. Fisher and L. Ely.

Section on Urology. Tuesday, December 30, 1913.

1. Cystoscopy as an Adjunct to Prostatectomy. G. L. Eaton. Discussed by R. L. Rigdon and V. G. Vecki.
2. Treatment of Gonorrhoea in the Female. John C. Spencer. Discussed by M. Krotoszyner, G. L. Eaton, V. G. Vecki and J. J. Hogan.
3. Does a Relationship Exist between Tuberculosis of the Epididymis and Tuberculosis of the Kidney? R. L. Rigdon. Discussed by M. Molony, M. Krotoszyner and G. L. Eaton.

PRESIDENTIAL ADDRESS.

By H. B. A. KUGELER, M. D.

Fellow Members of the San Francisco County Medical Society:

I desire to thank the Board of Directors for the honor of electing me their presiding officer and President of the Society.

For eighteen years I have taken an active interest in the affairs of this Society, but even that did not bring to my personal knowledge the peculiar complaints of members and non-members as to what the Society should do and what it should not do. I desire to emphasize the fact that the most peculiar complaints came from those who were members and who never attended meetings. I have tried in every way possible to impress on the members that the only way that errors in the Society can be corrected is through the active participation of those members in the meetings and proceedings of the Society. To those members of

the profession outside of the Society, I have taken every possible occasion to bring home the fact that they could not dream of correcting errors in the Society unless they were members, and by their participation in the discussions and meetings correct any deficiencies that they felt the profession of San Francisco was suffering from.

I wish, furthermore, to express appreciation to the Board of Directors for their unfailing support and assistance in all acts that the President was called upon to do. I wish to thank the members of the Society for their uniform courtesy and their attention at the meetings. I must reiterate the statement that has been made for years, that the attendance at the meetings of the Society is to be deplored; the members should show a greater interest by being present.

When I was elected to the Presidency of the Society, there were three subjects that required immediate attention, as I said to the Board of Directors on assuming office.

The first was the question of membership. I felt that a more liberal interpretation of the requirements for membership should be impressed upon the Committee, particularly in regard to medical men who were doing contract practice. I was greatly supported in my attitude by the report of the Judicial Council of the American Medical Association at the last meeting of the House of Delegates, when the stand that I had taken was expressed in exactly the terms that I had felt as fundamental in this question.

The second subject was the amalgamation with a university library; and I feel that after many years of argument and discussion, this question has been settled once and for all. The County Medical Society must keep itself free from any entanglement with any university.

The third question was the proper housing of the Society. It has been understood for a number of years that the present housing of the Society was inadequate and a disgrace to a society of the size and standing of the San Francisco County Medical Society. After months of effort—years in fact—a plan was evolved which provided not alone for proper housing of the Society and its library, but at the same time provided a monument to the medical profession of the City and County of San Francisco. It is to be greatly deplored that there was not the co-operative spirit in the Society which allowed this plan to be matured. There is at the present time a plan in process of maturation which may provide the Society with a real home of its own, not entangled with elaborate financial possibilities. It is to be sincerely hoped that within a very short space of time this Society will have a decent home, where it can hold its meetings and where its members may not alone consult its library, but also meet on a social basis.

I would respectfully ask of the members of this Society their unqualified support of the State Board of Examiners. While it may be true that the law enacted by the last legislature is decidedly faulty, the present board is doing the very best it can.

It consists of men who are earnest in their endeavors to help the medical profession of the State of California, and I believe that they should have the absolute support of every reputable physician within the state.

For many years past it has apparently been the belief of the majority of members of the County Medical Society that it is the main function of that Society to act as a literary and debating society. This condition no longer obtains because a county medical society has a far larger function. It is at present the popular belief, not alone in the ordinary lay mind but even in the governing bodies of this state, that a county medical society is a branch of the so-called Medical Trust. It is unfortunately a fact that a medical society—or a Medical Trust, if it really exists—has not one iota of the power or cohesion that attaches to an ordinary labor union, and that charge must absolutely fall because it would be possible to get the members of no medical society to agree sufficiently to carry out any such motives as have been ascribed to us. It is true that there are a few counties in which the branch society has been able to bring into its fold every regular member and enforce certain fundamental things, but in any large city this has been impossible. The community at large must be taught to recognize the true status of its county medical society. It must learn to go to it for advice in medical matters, or matters pertaining to the public health, and also to heed the warnings of their local medical society when this society feels that such advice must be given. This fact has been impressed on the people of the United States in messages of former presidents and in planks of platforms by the leading political parties of this country. However, before we can expect the recognition of the community at large of the status which we are considering, it is necessary for us to do a very considerable housecleaning.

I would call your attention to the 14th verse of the 4th chapter of Jeremiah, where he says: "O Jerusalem, wash thine heart from wickedness, that thou mayest be saved. How long shall thy vain thoughts lodge within thee?"

I wish to call attention to a series of very serious abuses within the medical profession and suggest remedial measures for them. We will start at the head, or so-called head of the profession. You will remember that about a year ago, in a meeting of this Society, a series of papers was read, the sum and substance of which was that the great thing in a community was to have a university hospital. A visitor was present who evidently had been preaching throughout the United States that the very rich and the poor were the only people who enjoyed the benefits of a university hospital. I say to you that the reason is that the rich do not know any better, and the poor cannot help themselves. The rich love a retinue of liveried servants, and it will not be many years before the medical societies of this country will be debating with the same earnestness that the London Medical Society a year or two ago debated, the question—Has the medical man the right to enter the front door of his wealthy client,

or should he enter through the tradesmen's and servants' entrance? These so-called professors are assuming a stand at the present time that when a patient comes to them and a consultation is suggested—and this patient suggests a certain doctor who is not among the elect—he is told that "We only consult with Professor So and So, or Professor So and So." The feeling of antipathy to this spirit is becoming widespread in this country and had its culmination in the spectacular display which occurred at Chicago not many months ago. We are informed that there are 1050 consecrated surgeons in the United States, especially ordained—so report goes—by an imported high priest from Great Britain. There are some university professors among them. Naturally, it would not do to make it too evident, but this is undoubtedly the underlying motive of this whole procedure. Furthermore, these great professors forget that the great advances in medicine for ages have been made, not by university professors, but by men who were in the active practice of their profession. A few have subsequently been made professors, but they were made professors for what they had done—they did not do much after they became professors. Furthermore, it must be recognized that a great deal of the scientific work of the country is done in hospitals that are not university hospitals, and the layman recognizes the fact more than the members of the profession realize.

There is another class in the profession, the chiefs of the medical departments of the large corporations. How are the assistants chosen? The chief looks around and picks out a young man who has a large following. He is selected as an assistant, the inference being naturally that all consultations and all operations shall be referred to the chief. The question of splitting fees in this particular series will not be touched upon.

We come now to the chiefs of the staffs of various large hospitals throughout the country. If there is one class more than the professors who have been accused of wandering about the country and offering 50% or more discount on operative cases sent to them, these are the men who are so accused. Since the American Medical Association has taken the very energetic stand that it has against fee splitting, this is no longer done. Nowadays the family practitioner collects the fee and then goes to the great surgeon and asks him if he will do the operation for one-half of what he has collected! Now then, the young man who studies medicine enters the profession with high ideals; in the course of his years of study he sees these various practices; what can be the effect? Complaint has been made that the Association of American Medical Colleges requires 72 hours of medical jurisprudence. Why not devote some of that time to the teaching of medical ethics, bearing in mind that "example is better than precept"?

We come then to the general practitioner—the man who feels that he must have a living income, and who joins a lodge and becomes the physician of this organization. He sees the rivalry going on among the big men for appointments as professors; he sees the rivalry going on among the great

men for large corporation appointments; he sees the nasty politics going on for appointments as chiefs at the various hospitals. Do you blame him if he is angry when these same great men in the profession make slurring remarks about his tactics in trying to make a competency by obtaining a position as physician of a society or lodge? The principle is the same clean through from the top to the bottom.

We must now remember that there are a great many men who have no entanglements, alliance or connections in any of these various directions, and they are the real backbone of the medical profession, just as the so-called bourgeois of France was the mainstay of that country. The trouble is that these men do not do their duty; do not join their county medical society and act as the balance of power between these various contending factions. If we can persuade these men to come in, and simply by their presence lend a dignity and tone to the meetings of the Society, it is going to help the profession a great deal. Furthermore, I believe that more frequent social functions, bringing the men together in a spirit of good fellowship will help to wipe out a great deal of the misunderstanding in the profession. If the men on top will observe the Golden Rule themselves, and not expect more of the men down below than they are doing themselves, the medical profession will evolve from that time and we can go about the world and the community at large and occupy the position which belongs to a profession which has the oldest and most honorable history in the world.

As the poet says:—

"Let us then be up and doing
With a heart for any fate;
Still achieving, still pursuing,
Learn to labor and to wait."

REPORT OF SECRETARY.

As Secretary I beg leave to submit the following report for 1913, that is, from December 10, 1912, to December 8, 1913, inclusive.

MEMBERSHIP.

The total number of members for whom we have paid assessments to the State Society is 589 as compared with 556 of last year, an increase of 33 members for the year: (34 were really admitted, of whom 1 came by transfer from Los Angeles, where his assessment was paid). Of this number there are:

Paid up with us.....	558
Dropped for non-payment.....	5
Died	2
Transferred	1
Delinquent	23

It may be of interest as a matter of record to note the following:

In 1907 the membership was	498
1908	482
1909	482
1910	476
1911	548
1912	556
1913	589

It will thus be seen that while so-called membership campaigns have not been productive of much good in the past, a steady, persistent effort on the part of this office has led to a gradual increase in our number. There is still considerable work, however, to be done along these lines, and hoping that this may be an incentive to our members to get busy, we wish to state that the membership of the Los Angeles County Society exceeds ours by a considerable number. We should not rest until every eligible physician and surgeon within the county has joined our society. Surely a little persuasion on the part of a man's confreres should suffice to show him the benefits of membership.

NON-PAYMENT OF DUES.

Several persons, whose assessments to the State Society were paid, have nevertheless been dropped from our membership roll because of non-payment of dues. These names will be put in our February program, as will the names of several others who will probably be dropped about that time.

Whereas this office has been unable to collect from these gentlemen, we hope some kind friend will take up this matter with them and, if possible, succeed where we failed.

SCIENTIFIC MEETINGS.

Judging by the expressions of approval on the part of members who have attended meetings, we believe that the papers have been as good, if not better, this year than at any time in the past. We would like to call attention to the fact that few men comply with the rule of posting their papers in the Society 10 days preceding the meeting. Even those who prefer to talk without notes would greatly oblige physicians and encourage intelligent discussion if they would give a syllabus of their remarks—not to exceed 10 lines—which we would gladly publish in the program. The same applies to all essayists, a brief description of whose papers would likewise appear in the program. As the latter are printed by the 25th of each month, these abstracts must, of course, be furnished to the office in ample time. In future meetings, we would suggest that one medical and one surgical meeting be devoted to the reports of mistakes in diagnosis or in treatment, thus to be a contrast to the usual papers, which report either unusually clever diagnoses or remarkable results of treatment. Too often the public assumes that our judgment and skill should be perfect. If we are more honest with ourselves and the public, we will undoubtedly learn more and have fewer damage suits. We would furthermore suggest that a resolution be

introduced authorizing us to request representatives of newspapers to attend our meetings, feeling that in this way the public would be educated with far greater rapidity and success than it has been in the past when newspaper reporters have only slipped into meetings on those occasions when quasi-scientific discoveries by self-styled scientists were to be presented with great eclat. According to our present ethics and policies, the lay press is usually unable to obtain reliable information of medical doings, and in its zeal for news probably exaggerates and distorts what information it does get hold of. We feel that with proper encouragement, and with less reticence on our part, the newspapers can be trusted to properly report the transactions of our Society without giving undue notoriety to names of members, just as is done in all large medical centers abroad and is being done more commonly in the East. We would like to be able to send copies of the J. A. M. A. and the CALIFORNIA STATE JOURNAL OF MEDICINE to every important daily in this city.

LEGISLATION.

The Society contributed \$100 toward the work of the Public Welfare League in the latter's endeavors to get proper medical legislation carried. In addition to this, the Directors unofficially by private subscription contributed a similar amount.

The Secretary wishes to express his sorrow at the untimely death of our building scheme. Without a building of its own, such as had been planned, without the advantages which the individual members would have enjoyed in occupying such a building; without the advantages the Society itself would have obtained; without the prestige that the Society would have acquired by building such a monument as it had planned; we feel that the Society has now but little to look forward to. Its future, without a building, cannot be very much greater than its past. To quote the Secretary of the Los Angeles Society, which is engaged in erecting a building:—"Without a home we will have a loosely organized Society with transient and varying spurts of activity or inactivity, according as we elect from time to time working and non-working groups of officers."

ENTERTAINMENT.

The Secretary feels that the Society does not show sufficient courtesy to physicians or laymen who come as guests of the Society to address its members. At the last minute they are frequently shunted to the end of the program so that because of the lateness of the hour not sufficient consideration can be given to their remarks. We know it to be the custom of some of the county societies in the interior to pay the traveling expenses of men who come from San Francisco to address their meetings, and those of our members who have gone to Los Angeles for similar purposes tell us that several homes or clubs are offered them, either the host or the Society bearing the expense. We see absolutely no reason why a society like ours

cannot make an arrangement with some one or two clubs here to do the same for our guests.

Balance on hand Dec. 10, 1912.....	\$1485.88
Collected from members.....	7124.25
Subrental of Library.....	150.00
Sale of duplicates.....	16.00
Interest on Relief Fund.....	450.00
Advance repaid by Relief Fund.....	5.00
Gift from Dr. Wortmann.....	5.00
Milk Commission (telephones & telegrams)	7.09
Banquet, 1912.....	177.75
Repaid for binding.....	6.85

Plus Pac. Tel. & Tel. check sent Sept.	
15, lost in transit.....	9.05

Making a total of.....\$9436.87
We disbursed by check—

Telephone	\$ 152.70
Entertainment Committee (Banquet, 1912)	172.90
Secretary's salary ('12) and Bond ('13)..	205.00
Committee on Necrology (1912).....	5.40
Rent of Library.....	1200.00
Salary office assistant.....	900.00
Laundry	18.00
Relief Fund (150 repaid general fund, see Jan. Voucher 491).....	305.00
Incidentals, including water, insurance, lamps, safe dep. box, repairs to typewriter, membership Chamber Com., operation stereopticon, etc.....	351.62
Printing and Stationery.....	508.30
Assessment to State Society on 589 members	2356.00
Loan State Society (90 days—due Jan. 15, 1914).....	1000.00
Library: Foreign jnls. for '12....	\$ 618.53
Domestic jnls., 1912.....	13.00
Domestic jnls., 1913.....	63.00
Domestic jnls., 1914.....	6.00
State Soc. lieu exchanges.....	180.00
Filing files.....	84.40
Book rests.....	10.00
Med. Lib. Assn.....	10.00
Binding	347.05

\$1331.98 \$1331.98

\$8761.36 \$8761.36

Leaving a balance of.....\$ 675.51

The following approximate amounts, bills for which are not yet received, will, of course, have to be paid by December 31st:

New book stack for Library.....	\$ 70.00
Century Dictionary.....	76.95
Foreign jnls., 1913 (about).....	618.00
December printing (ballots, return envelopes, postals & prgrms—about)	45.00
Water for Nov. and Dec.....	4.00
Filing foreign files (about).....	100.00
Secretary's salary, 1913.....	200.00
Xmas present Butler Bldg. employees	10.00

\$1123.95

Bal. in bank.....	\$ 675.51
Due from St. Soc. incl. int. on loan.....	1015.00

\$1690.51
Bills due approximately.....1123.95

Surplus of approx.....\$ 566.56

(This is the first time that the Society's books have been so kept as to show the actual financial status were the Society to go out of business December 31. The showing, when one considers the large sums expended for library and the sums expended by the Building Committee and the Committee on Legislation, is a most creditable one and cannot be compared with that of last year when no account was taken of outstanding bills, especially those of the library.)

As the detailed report of the Librarian will show, he has authority granted him by the Board of Directors to draw \$139.43 in addition to the sum required for outstanding bills.

Respectfully submitted,

(Signed) RENÉ BINE.

REPORT OF THE LIBRARIAN.

To the President and Members, S. F. Co. Medical Society.

Gentlemen:—The progress of our library for the past year may, I think, be considered as satisfactory.

Restricted by our limited income, we have had to confine our efforts as heretofore, to the acquisition of the more important clinical journals and to the completion of their files. We have not subscribed to purely scientific journals, considering that these, of more academic interest, should be kept by the two university libraries, particularly the Lane Library, which is open to the medical public, and whose files we have, in a measure endeavored to supplement rather than duplicate.

The increased interest and increased frequency with which the library is consulted show, I think, that there is room for two medical libraries in San Francisco, one a large academic one, the other centrally located and easily accessible, a working library for the general practitioner. It is with this end in view that we have tried to develop our collection of books and journals.

The purchase of more expensive text-books, systems, and hand-books, those which not every man is able to afford to buy for himself, would be very desirable should our means permit, but we have heretofore had money for the purchase of journals only and not for books. What books we have, have been received for the most part from the CALIFORNIA STATE JOURNAL in exchange for reviews, and as gifts. We should like to thank the reviewers for their aid, and to further urge promptness and willingness to help us with these services. We are very grateful to those members who have presented us with books; and would urge members, if they have newer text-books that they can spare to give them to the library. All such donations are acknowledged in the monthly programmes.

We greatly need more room, and now that the scheme for a building of our own has seemed impossible, must see what other remedy is available; we have made arrangements to have a shelf built out from between the two last windows of the meeting room, as a temporary expedient.

We have during the past year sent circular letters to the largest foreign publishers requesting exchange of journals with the CALIFORNIA STATE JOURNAL and the sending of books for review. Some of them have complied, and we now receive some journals free, through the STATE JOURNAL, for whose subscriptions we formerly had to pay. We have also received a number of foreign books for review.

We have sold some duplicates—not as many as last year, having less on hand.

We have recently bought a Century Dictionary, in compliance with numerous requests from members.

We have ordered journals to complete the last 20 years' files of the more important foreign medical weeklies, these have been ordered abroad,

and should arrive in a month or two. We have purchased in the last year..... 17 volumes
Received from the CALIFORNIA STATE

JOURNAL 123 volumes
By gift..... 53 volumes

Total 183 volumes

We have 384 volumes bound.

We subscribe to, or receive from the STATE JOURNAL 178 journals. In presenting the financial statement included in the Secretary's report we may explain that before this year all foreign subscriptions were paid for at the end of the year when the journals were received, thus leaving the library with a considerable debt on the 1st of each January; we changed this in the beginning of 1913, so that the library has now paid up, or has the money to pay up all subscriptions in advance.

Respectfully submitted,

(Signed) LEO ELOESSER,
Librarian.

REPORT OF THE MILK COMMISSION

Mr. President and Members of the Society:

The Milk Commission of the San Francisco County Medical Society has held 14 meetings this year.

Two new dairies have been certified.

The American Dairy at Oakdale, California, was certified in October 1912. After several months its counts increased to be steadily about our limit, i. e., 10,000 per c.c. The dairy changed management, and was found in unsatisfactory condition on individual visits by three of the Commission. An effort was made to have conditions improved under a resident inspector from the University of California, but after a ten days' drill on technic no permanent improvement was found, and your Commission removed its certification in August 1913. This experience makes us realize that the certified dairy must not only be built to satisfy our requirements, as this dairy did in the fullest degree, but it must be managed by an intelligent trained dairyman, such as the University and the State Farm at Davis are able to supply. An inexperienced man is as much out of place in a certified dairy as an inexperienced nurse would be in a modern operating room. Tiled floors and enameled furnishings mean little unless each step of technic is understood and executed.

In December 1912 the Peacock Dairy at Bixler was certified. This dairy had built its barn without consulting our experts, and had imported a tuberculin tested herd of Holstein cattle from Wisconsin. The herd was remarkably free from tuberculosis at our first test, and with certain modifications we accepted the plant and certified the dairy. The milking machine was in use. Theoretically, this should obviate bacterial invasion of milk. Practically, we were convinced that it did not, as at no time did this milk run as low as the other certified dairies. The fat content of the milk—due to the Holstein herd—was seldom 3.5 and ranged most of the time below 3.3, which is

the requirement for city milk. As our suggestion to add some Jerseys to the herd—and thus increase the fat content—was not taken, it became the duty of the Commission to withdraw this certification on July 20, 1913.

The San Ramon Dairy at Walnut Creek has been sending certified milk to Oakland for some months, and was certified by your Commission August 28, 1913. This dairy is managed by the owner.

Certified milk from our dairies now reaches Sacramento, Suisun, Vallejo, San Jose, San Mateo, the whole of Marin County, and is carried on the Southern Pacific System and Ferry boats—250 quarts a day.

Our producers are the Sleepy Hollow Ranch at San Anselmo, the Timm and Hutton dairies at Dixon, and the San Ramon Dairy at Walnut Creek. In January 1913 3170 quarts of certified milk were sold daily in San Francisco County; they are now selling 3659 quarts a day, a gain of 489 quarts for the year.

It seems to the Commission that this is not the type of growth a product certified by a society the size of ours should have. We expect to send you more data about the milk monthly during this next year, and wish to secure your support for a product whose standard is kept up by the steady interest of your Commission. Under the growing prevalence of Pasteurization of the city's supply of commercial milk, we are rapidly reaching the condition of New York, where the only unpasteurized milk is certified milk.

During the year we have kept an inspector in the local field who visits all distributing stations and examines milk on wagons, and watches the handling of certified milk in the city. Acting on her reports of repeated abuses, we have refused to allow the Crystal Creamery to handle certified milk at all, and have notified our producers to that effect.

Our relation to the University of California has changed during the year. On the rearranging of the Department of Agriculture under Dean Hunt, a ruling preventing appointees of that department from earning money on the outside was made. The University has taken over the work of experting the milk, furnishing the veterinary examination as well as the chemical and bacteriological monthly examinations. The Recorder's Office collects the bills for this work and renders us a quarterly financial report on the same. The arrangement is in effect for a year from July 1, 1913.

The President of the Commission attended the annual meeting of the Medical Milk Commissions of the United States in Minneapolis, as a delegate from the Alameda and San Francisco County Medical Milk Commissions. Emphasis on the care of milk in the home was made by the Rochester, N. Y., Commission, who had found over 50% of refrigerators inadequate in holding milk below 50°, and many of them far from sanitary.

The value of certified milk in infant feeding has again this year been proven on the foundling babies of the city. A death rate of 3.2% is theirs against 9.4 for the city. These babies are uniformly fed

on modified certified milk, and are all under 2 years of age. Two hundred and forty were cared for this past year. The Commission regards itself as peculiarly fortunate in having this practical demonstration of the advantage of clean milk as a basis for infant feeding, for the vital statistics of so large a group cannot be refuted.

In closing, your Commission wishes to urge your co-operation in its efforts to promote the understanding and appreciation of its work for public health in securing and upholding certified milk for our San Francisco market.

Respectfully submitted,

ADELAIDE BROWN,
President.

SOCIETY REPORT

ALAMEDA COUNTY.

The annual meeting of the Alameda County Medical Association was held at the Hotel Oakland on Tuesday evening, December 16, 1913. The meeting was called to order by the President, Dr. M. L. Emerson, at 8:30.

The minutes of the previous meeting were read and approved.

The members then listened to a very interesting address by Mr. A. J. Pillsbury, of the California State Industrial Accident Board on the subject of the "Employees' Compensation, Insurance and Safety Act." Dr. Philip Mills Jones, Secretary of the State Medical Society, was present and also made a few remarks on the subject, calling particular attention to the efforts of insurance companies to make a schedule of fees for physicians called to attend cases under this act which will be altogether too low.

Dr. Dudley Smith made a motion, seconded by Dr. Reinle, that the President appoint a committee of three to confer with the State Industrial Accident Board in regard to the schedule of fees to be paid physicians attending cases under this act and to report to this Association before any definite action is taken in the matter. Carried. The President stated that he would leave the appointment of this committee to the new President. The new President, Dr. Dudley Smith, later made the following appointments on this committee: Dr. G. G. Reinle, Chairman; Dr. L. P. Adams and Dr. Alvin Powell.

The reports of the Chairman of the Medico-Legal Committee, Secretary of the Council and of the Association and the Treasurer were received. The Treasurer's report showed a balance of \$1412.74 with one bill of \$10.00 still to be paid. Dr. Dukes moved that the reports be accepted. Seconded and carried.

Dr. Pauline Nusbaumer, Chairman of the Board of Tellers, submitted the following report: President, Dr. Dudley Smith; Vice-President, Dr. G. G. Reinle; Secretary-Treasurer, Dr. Elmer E. Brinckerhoff; Councillors, Dr. J. A. Ellis, Dr. W. H. Irwin, Dr. Alvin Powell, Dr. G. P. Reynolds, Dr. H. N. Rowell, and Dr. W. H. Strietmann; Delegates, Dr. S. H. Buteau, Dr. M. L. Emerson, Dr. O. D. Hamlin, Dr. C. W. Page and Dr. G. G. Reinle; Alternates, Dr. L. P. Adams, Dr. A. A. Alexander, Dr. D. Crosby, Dr. C. A. Dukes, Dr. A. F. Gillihan, Dr. A. S. Kelly, Dr. C. P. Pond, Dr. A. M. Smith and Dr. R. T. Sutherland.

Short speeches were made by the retiring and incoming Presidents and the Vice-President. The new President stated it as his desire to make the meetings of the coming year clinical ones as far as possible, believing that in this way they can

be made much more interesting, with a consequent increase in the attendance.

There being no further business, the meeting adjourned.

ELMER E. BRINCKERHOFF, Secretary.

CALIFORNIA ACADEMY OF MEDICINE.

The California Academy of Medicine held its regular meeting on December 22, at the rooms of the County Society.

Scientific Program.

Asymmetrically Lower Blood Pressure in an Instance of Asymmetrical Raynaud's Disease. Drs. Montgomery and Culver. Discussed by Drs. Rixford, Kilgore and Alverez.

The following officers were duly elected: President, Dr. T. C. McCleave; Secretary, Dr. Saxton Pope; Treasurer, Dr. H. M. Sherman; Vice-President, Dr. Orn Fitch Cheney.

MERCED COUNTY.

The Merced County Medical Society held a well-attended and highly interesting meeting December 4th at the office of the Secretary in the Shaffer Building. A number of doctors from out of town were present, among whom were Drs. Julien and Reardon of Turlock and Dameron of Stockton. An interesting paper was read by Dr. Dameron entitled, "Closure of Abdomen in the Face of Sepsis." The doctor was backing up some new ideas in surgery with a recital of a large number of successful cases and the instructive discourse drew forth a lengthy discussion which was highly enjoyed by all present.

The annual election of officers resulted as follows: President, Dr. E. A. Julien, Turlock; Vice-President, Dr. Brett Davis, Merced; Secretary, Dr. H. Kylberg, Merced; Treasurer, Dr. W. E. Lilley, Merced; Board of Censors, Dr. D. Zirker, for three years; Dr. B. Davis, for two years; Dr. E. S. O'Brien, for one year. Delegates to the State Medical Society for two years, delegate, Dr. F. B. Reardon of Turlock; alternate, Dr. P. N. Jacobson of Turlock.

The Merced County Medical Society has enjoyed a prosperous and harmonious year, and has had the pleasure of entertaining some distinguished visitors during the course of the year. Visitors at last night's meeting, not physicians, but taking an active part in the banquet prepared at Hotel El Capitan, were the complete dental faculty of Merced, Drs. Smith, Heitman and Peck, also the Hon. F. Bondshu, assessor of Mariposa county, who entertained at the table with well chosen and witty remarks.

The meeting, as usual, closed in peace and harmony at 1 g. m.

H. KYLBERG, Secretary.

MONTEREY COUNTY.

The Monterey County Medical Society at a meeting held at the Hotel Abbott, Salinas, January 9, 1914, elected the following officers for the year: President, Dr. Garth Parker; Vice-President, Dr. L. B. Graham; Secretary, H. T. Crabtree; Treasurer, Dr. Jno. Parker; Censor, term to expire in 1915, Dr. J. A. Beck; Censor, term to expire in 1916, Dr. Garth Parker; Delegates to State Society, Drs. H. T. Crabtree and L. B. Graham; Alternates to State Society, Drs. Garth Parker and John Beck.

H. T. CRABTREE, Secretary.

RIVERSIDE COUNTY.

The last meeting of our County Medical Society for 1913 was held at the Mission Inn, December 8th.

Inasmuch as this was the last meeting of the year the regular annual election of officers was

held. Dr. J. H. Holland of Riverside was elected President; Dr. E. H. Wood of Arlington was elected Vice-President, and Dr. George E. Tucker was elected Secretary and Treasurer. Dr. H. R. Martin was elected Delegate for 1914-1915, and Dr. John C. King of Banning was elected Alternate.

As is our regular custom for the December meeting, each member of the Society present was called upon to present a case report. A series of unusual cases of throat infection were reported by several members of the Society and Dr. Stanley Black of Pasadena, who was one of the guests for the evening, discussed these cases from a bacteriological and laboratory standpoint.

During the year 1913 nine regular meetings were held, with a general average attendance of twenty-one doctors, and an average of eighteen members per meeting. Six new members were added to the society during the year.

There has been an average attendance of three guests at each meeting, including Dr. J. B. Murphy of Chicago, Dr. Max Rosendorff of Portland, Oregon, Dr. J. H. Webster of Chicago, Dr. R. Smedley of Salt Lake City, Dr. Olga M. McNeil of Los Angeles, Dr. Stanley Black of Pasadena, and nearly every member of the San Bernardino County Medical Society has attended one or more meetings.

GEORGE E. TUCKER, Secretary.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the offices of Drs. B. J. and D. R. Powell, Friday evening, November 28, with Dr. H. E. Sanderson in the chair. The following members were present: Drs. H. E. Sanderson, Linwood Dozier, J. T. Davison, Mary Taylor, Barton J. Powell, J. A. Young of Oakdale, D. R. Powell and R. T. McGurk.

After the reading of the minutes the following business was transacted: Drs. S. P. Tuggle, J. T. Davison and W. F. Priestly were elected to membership, and the names of seventeen members were placed in nomination as candidates for the Board of Directors for the coming year.

The business of the meeting completed, Dr. Sanderson called upon Dr. Dewey R. Powell to read his paper, "The Submucous Resection of the Nasal Septum." The subject was well presented and made especially instructive with the aid of drawings and plates projected on a screen by Dr. Dozier. Further points were brought out in the discussion amongst the general practitioners present.

R. T. MCGURK, Secretary.

SANTA CRUZ COUNTY.

Santa Cruz County Medical Society met December 12th in Santa Cruz. The following officers were elected:

Dr. F. H. Koepke, Watsonville, President; Dr. W. H. Keck, Santa Cruz, First Vice-President; Dr. A. N. Nittler, Davenport, Second Vice-President; Dr. G. P. Tolman, Watsonville, Secretary-Treasurer; Dr. H. G. Watters, Watsonville, Censor three years; Dr. P. T. Phillips, Santa Cruz, Delegate to State Meeting; Dr. E. E. Porter, Watsonville, Alternate.

It was decided to have two papers or clinics at each meeting. At the next meeting Dr. Koepke will read a paper, discussion to be opened by Dr. Keck. Dr. Nittler will also have a paper, to be discussed by Dr. H. G. Watters. Twenty-five dollars was donated to Dr. Geo. H. Tucker, to help defray expenses incurred at the last legislature.

GEORGE P. TOLMAN, Secretary.

SONOMA COUNTY.

At the January meeting of the Sonoma County Medical Society, the following resolution was made to send to the Medical Society of the State of California:

"Whereas, The fees offered by the Casualty

Companies doing business under the recently enacted 'Workmen's Compensation Act,' are inadequate for the services required; therefore, be it

"Resolved, That we, the members of the Sonoma County Medical Society, request that the proper officials of the Medical Society of the State of California take up the matter with the Casualty Companies and State Officials concerned for proper adjustment."

The following officers were elected in December: President, Dr. J. W. Scamell of Santa Rosa; Vice-President; Dr. F. E. Sohler of Geyserville; Secretary, Dr. A. R. Howard of Santa Rosa; Treasurer, Dr. F. O. Pryor of Santa Rosa; Censor, Dr. S. S. Bogle of Santa Rosa; Delegate, 1915-1916, Dr. Jackson Temple of Santa Rosa; Alternate, Dr. J. W. Cline of Santa Rosa.

ALLEN R. HOWARD, Secretary.

VENTURA COUNTY.

The Ventura County Medical Society held a pleasant reunion at Pierpont Inn, December 10th, when the members were guests of Dr. Ralph W. Avery, of Oxnard, who retires from the presidency of the organization. All sections of the county were represented. A full-course dinner was enjoyed, followed by a discussion on topics of interest to the profession; Dr. Teubner reading a timely paper.

The following officers were elected for the coming year: Dr. Benj. E. Merrill, Santa Paula, President; Dr. Allen Peek, Oxnard, Vice-President; Dr. H. B. Osborn, Fillmore, Secretary.

BOOK REVIEWS

"Praktische Winke für die chlorarme Ernährung."

By Prof. Dr. H. Strauss. Published by Karger, Berlin, 1914.

This is a second edition of Strauss' well-known teachings on the question of salt-free diet, a good portion of which is incorporated in his larger work on the dietetic treatment of internal diseases. A number of tables of value to the student of dietetics are here included; likewise recipes for many dishes made palatable in spite of the absence of sodium chloride in the cooking. To those familiar with the indications for a salt-free dietary, the value of such a little work is obvious.

R. B.

Dorland's American Illustrated Medical Dictionary.

New (7th) Edition Revised and Enlarged. Dorland's American Illustrated Medical Dictionary. A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology and kindred branches; with new and elaborate tables. Seventh Revised Edition. Edited by W. A. Newman Dorland, M. D. Large octavo of 1107 pages, with 331 illustrations, 119 in colors. Containing over 5,000 more terms than the previous edition. Philadelphia and London: W. B. Saunders Company, 1913. Flexible leather, \$4.50 net; thumb indexed, \$5.00 net.

This new edition of the dictionary is even more valuable than any previous edition and is in constant use on the editorial desk. From the frequency with which it is used to determine and correct the errors of some contributors, it would appear to be well worth while for almost anyone contemplating the perpetration of a medical article to purchase a copy.

A Reference Hand-Book of Gynecology for Nurses.

By Catharine Macfarlane, M. D. Gynecologist to The Woman's Hospital, of Philadelphia. Second Edition, thoroughly revised. 32 mo. of 156 pages, with original line-drawings. Phila-

delphia and London: W. B. Saunders Company, 1913. Flexible leather, \$1.25 net.

This little book of 150 pages covers very fully, yet most concisely, the subject of gynecology as taught to nurses. In my opinion, the book could well be used as a text-book in connection with lectures, and as a reference handbook for nurses it is certainly very valuable. A. E. R.

A Text Book of Biologv. For Students in Medical, Technical and General Courses. By William Martin Smallwood, Ph. D. (Harvard), Professor of Comparative Anatomy in the Liberal Arts College of Syracuse University, and in charge of Forest Zoology in the New York State College of Forestry at Syracuse. Octavo, 285 pages; illustrated with 243 engravings and 13 plates, in colors and monochrome. Cloth, \$2.75, net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

In this small volume of two hundred and eighty pages the author has attempted to cover the wide field of general biology in such a way as to deal specifically with the more important subdivisions of botany zoology, embryology, bacteriology, immunity, heredity, etc. The text is well written and attractively illustrated, but the scope of the volume is much too wide. The whole is of the most elementary character, probably well adapted for students in high or preparatory schools or for the general reader, but as a text-book for medical students or as a volume of reference for the medical practitioner it cannot be recommended.

E. C. D.

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume II, Number VI (December). Octavo of 186 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Published Bi-Monthly. Price per year: Paper, \$8.00; cloth, \$12.00.

Contents: Tuberculosis of the Lung; Production of Artificial Pneumothorax by Injection of Nitrogen according to Dr. Murphy's Method. Bone Cyst of the Radius. Pyonephrosis; Drainage. Exostosis of Radius and Ulna. Ununited Fracture of Radius, Previously Plated; Transplantation of Bone. Ankylosis of Elbow. Laminectomy for Tuberculosis of Spinal Column, with Compression of Spinal Cord; Kyphosis and Lateral Curvature; Motor Paralysis. Subcutaneous Abscess Following Tuberculosis of the Spine; Aspiration and Injection of Formalin and Glycerin Solution. Undescended Testicle in Inguinal Canal. Cholelithiasis; Stones in Common Duct, with Intense Jaundice. Students' Clinic at Opening of Session this Year. Metastatic Carcinoma of Femur. Traumatic Sarcoma of Femur. List of Cases Operated on and Demonstrated by Dr. John B. Murphy at Mercy Hospital During the Week of the Clinical Congress of Surgeons of North America, Nov. 10-15, 1913. Index to Volume II.

Theorie und Praxis der Inneren Medizin. Dr. Erich Kindborg. Vol. III. Published by S. Karger, Berlin, 1914.

This volume completes one of the most valuable systems of medicine that has appeared in many years. The enthusiastic appreciation evoked by the first two volumes can be equally bestowed on this concluding volume. The admirable plan of presentation, the painstaking thoroughness and the unusual excellence of the sections on treatment that marked the initial volumes are sustained throughout.

The contents comprise: Diseases of the Kidneys and Urinary Apparatus; Diseases of the Blood; Diseases of the Nervous System; the Infectious Diseases, and the more important Poisons. Of especial note are the clear exposition on anatomical basis of the diseases of the spinal cord; the practical arrangement of the various poisonings accord-

ing to environment, occupation and habits; the excellent presentation of the subject of nephritis.

To the above may be added the statements that appeared in the review of the first two volumes, that the language used is simple, clear and concise; each chapter includes the anatomy, physiology, physics, chemistry and pharmacology requisite for a complete and clear understanding of the subject under discussion; the literature of the medical world is gathered and digested to be presented in the light of the writer's experience and judgment; methods of clinical examination are fully presented; each subject is placed in coordination with the sister sciences and in its proper relation to the scheme of medical science.

It is a book fit to occupy the highest place among text and reference works. G. H. T.

A Practical Treatise on Medical Diagnosis. For Students and Physicians. By John H. Musser, M. D., LL. D., late Professor of Clinical Medicine in the University of Pennsylvania; formerly President of the American Medical Association, etc. New (Sixth) edition, revised by J. H. Musser, Jr., B. S., M. D., Instructor in Medicine in the University of Pennsylvania; Assistant Physician to the Philadelphia Hospital; Physician to the Medical Dispensary of the Presbyterian Hospital; Physician to the Medical Dispensary of the Hospital of the University of Pennsylvania. Octavo, 793 pages, with 196 engravings and 27 colored plates. Cloth, \$5.00 net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

This valuable standard work has undergone a very thorough and complete revision which has brought it up to date in every particular and in addition has conferred the benefit of a judicious condensation of the more voluminous portions, thus rendering the book much more wieldy and practical. The section on Objective Diagnosis is especially to be commended, presenting, as it does, those valuable and so frequently neglected pieces of evidence that the physician should take into account when he is making an initial examination of a patient. There is a world of experience and wisdom in this chapter which each medical man should acquire and use constantly. The hundred-page section devoted to Laboratory Diagnosis is likewise valuable. It is condensed to the absolute essentials and contains only such technic as can be exercised in any physician's laboratory. The second part of the volume is devoted to Special Diagnosis and differs in no way from the other recognized books on this subject. Regarded as a whole, the work is the equal of any of the standard books in its field but presents no special characteristics that could be regarded as novel or original; it is a stereotyped example of students' textbook and practitioners' reference work stamped by conservatism and tradition. G. H. T.

Diseases of Women. By Chas. A. L. Reed. Published by D. Appleton & Co., N. Y., 1913.

The arrangement of the various subjects is a decided departure from that of the usual text book devoted to diseases peculiar to women. For instance, the very excellent article under the general head of "Menstruation and Its Disorders," by Dr. Dan Milliken, of Hamilton, Ohio, begins near the end of the book—page 756. On the other hand, subjects of much less practical every-day importance are given preference in the arrangement, to wit "Malformations," a subject which the author has dealt with in considerable detail, is the first subject considered. Again, in addition to the topics usually considered under the head of gynecology, the following have been treated in detail, viz.: surgery of the rectum, certain obstetric operations and surgical conditions of the kidneys, ureters, and of the breast.

The diagnosis of rape is as good as any abstract that the reviewer is familiar with on the subject

and the points brought out under this heading should be familiar to any physician who assumes to pass judgment upon a subject so important that its decision is vital to the future welfare of any human being.

What the author has written on lacerations of the perineum would be dealt with in detail if space permitted, but the reviewer must take exception to the advice that the urine should be drawn exclusively by catheterization for at least the first week, for we know that infections can be more easily prevented by pitcher douches following urinating than by the many disadvantages of so promiscuous catheterization.

The reviewer was further disappointed by the omission of the continuous silk-worm-gut suture as evolved by Dr. Geo. B. Somers of this city, than which there is no better universal operation for the repair of a lacerated perineum. If some high-sounding name from an European center could have devised so simple and practical an operation it would be world-famous.

Likewise, the subject of cystocele is not brought up to date, as the most satisfactory operations for its correction are entirely omitted.

The infections of the genito-urinary tract in women have been entered into with considerable detail and are excellent.

The articles on ovarian embryomata (dermoid cysts and teratoma) are especially to be commended.

But on the whole, the book is a most valuable asset to any medical library—especially to the physician who by force of circumstances is compelled to handle this class of work without the opportunity of giving it special attention. C. J. T.

Treatment of Internal Diseases. For Physicians and Students by Prof. Norbert Ortner of the University of Vienna—Edited with Additions by Nathaniel Bowditch Potter, M. D., Assistant Professor of Clinical Medicine at Columbia University (College of Physicians and Surgeons), New York. Translated by Frederic H. Bartlett, M. D. Second Edition in English revised and reset from the Fifth German edition. J. B. Lippincott Company, Philadelphia and London. Price \$5.00.

This book covers in a detailed and exhaustive manner the modernized treatment of internal diseases. To the internist, and general practitioner as well, it must appeal at once as a reference work of inestimable value, due to the clear and systematic manner in which the text is written. Throughout this work great stress is placed on the pathological physiology of the diseases in question so that a clear conception of the therapeutic measures advised by the author are at once grasped by the reader's mind. Unlike most American books on therapeutics, it does not only mention the names of famous cures but describes and discusses their relative values and the results he had obtained with them personally. The elaborate manner in which drugless methods of treatment are described must be very gratifying to the reader who appreciates the importance of dietetic, therapeutic, mechanical and climatic effects on diseases. When the author recommends a particular climate or altitude he does not merely say a warm or a cold climate, a high or a low altitude, but mentions the ideal places which are to be found both in Europe and America, giving the reader a wide choice of health resorts to choose from.

When drugs are recommended their physiological action is discussed in detail and their toxic qualities carefully considered. Examples of prescriptions showing the best drug combinations are plentiful throughout the text. Many of the new drugs approved by the Council on Pharmacy and Chemistry are personally recommended by the au-

thor. The treatment of tuberculosis with tuberculin is ably described.

The only regrets the reviewer experiences are that there is no chapter in the book giving the modern treatment of Syphilis and that Radium Therapy was not taken up in the text, as the opinion of such a great clinician as Ortner on these modern methods of treatment would be of the greatest value to the readers of this work.

M. A.

Oral Surgery. A Text-Book on General Surgery and Medicine as Applied to Dentistry. By Stewart Leroy McCurdy, M. D., Professor of Anatomy and Oral Surgery, School of Dentistry, University of Pittsburgh, Pa. Dr. Appleton & Co., New York and London, 1912. \$3.00.

The author in his preface raises the question as to "whether oral surgery belongs to general surgery or to dentistry." Surgery of the mouth, jaws and contiguous parts has come to be known as oral surgery, and forms an important specialty of dentistry. This specialty has really been developed and raised to its present importance by men who were practical dentists, but who had passed through the training of the medical and surgical curriculum.

There can be no question as to whether it belongs to general surgery or dental surgery for it has been developed from dental surgery and occupies an important position in the curriculum of all of our dental colleges; while it is not given place, with but very few exceptions, in the medical curriculum.

The educated dentist is fully qualified to deal with all surgical diseases and injuries of the mouth and jaws, and to much better advantage from every standpoint than is the general surgeon by reason of his more intimate knowledge of the parts involved; the diseases and injuries to which they are subject, and by his higher degree of skill in oral manipulations.

The book in a certain way is a disappointment from the fact that one is led from the title—a pretentious one—to look for a more or less exhaustive treatise upon the subject of which it treats. The work is divided into two parts, General Surgery and Oral Surgery, followed by an Appendix composed of quiz questions upon the text.

Part 1. General Surgery, contains 97 pages, which is altogether too limited a space to give to so great and important a subject as the Principles of Surgery. We would suggest that in a second edition this subject be considerably elaborated for the benefit of dental students if the book is to be adopted by our dental colleges.

Part 2. Oral Surgery, is much more elaborately worked out (335 pages) but could with advantage be considerably elaborated. Brevity is sometimes the soul of wit, but this in other respects much to be desired feature can be carried too far in preparing a text-book. We believe the book would be greatly improved if the above suggestions could be carried out.

The Appendix (24 pages) is devoted to a series of quiz questions, the value of which is doubtful.

The author has written from the standpoint of the general surgeon and not from the vantage ground of the dentist, consequently he occasionally falls into error. Not many dentists will for instance agree with the following: "During extraction of teeth many accidents occur requiring the services of a surgeon. Fractures of the mandible or a considerable portion of the maxilla may occur requiring replacement or wiring. Slipping forceps or excavators may perforate important structures and injure an artery or nerve, resulting in dangerous complications," etc. The extraction of teeth by the average dentist is very rarely, practically never, attended by such accidents, and if such should occur the services of a surgeon would not be required by any dentist worthy of the name. It is only in the hands of quacks and incompetents

that such accidents can be at all common in these operations.

On the whole the book is well written and will prove a valuable help to the dental student who is preparing for examinations and to the busy practitioner who has not time to read a more elaborate text-book upon the subject.

J. S. M.

Pyorrhea Alveolaris. By Fredrich Hecker, B. Sc., D. D. S., A. M., M. D. A monograph of 157 pages and 32 illustrations. Published by C. V. Mosby Company. St. Louis, Mo., 1913. Price \$2.00.

Pyorrhea Alveolaris is a subject which is attracting more and more attention not only by the dental specialist but by the general practitioner of medicine as well, by reason of the grave dangers which are present in the disease from local and general sepsis.

We are in full accord with the author in the statement in his preface "that the disease is the result of constitutional and exciting causes which lower the vital resistance of the alveolar process, gum and peridental membrane." Also that this affection is responsible for many diseases in remote organs such as the eye, the ear, the tonsils, the throat, the heart, etc., due to septic infection through the lymph channels and the general circulation.

We stand aghast, however, when in Chapter 1 he enumerates eleven varieties of the disease. There is confusion enough already in the literature upon the etiology and diagnosis of this disease, but this array of special varieties of pyorrhea alveolaris increases the confusion and renders "confusion worse confounded."

The author would have us believe, seemingly, that nearly all inflammatory diseases of the oral cavity which result in the formation of pus are forms of pyorrhea alveolaris, and does not seem to be able to distinguish between this disease and the common varieties of gingivitis and stomatitis, the results of systemic and local conditions.

Pyorrhea alveolaris, so-called, is a disease which attacks the alveolar process, the peridental membrane and the gum, and is a progressive affection due to a lowered vital resistance of these tissues, brought about by constitutional conditions, among the most frequent of which may be named faulty metabolism and faulty elimination.

In the treatment of these many, so-called, varieties of the disease as classified by the author, the prominent and central thought is the employment of autogenous vaccines, which he recommends in all cases in conjunction with constitutional treatment, regulated diet, and the ordinary local treatment of cleansing the mouth, scaling the concretions when present, and antiseptic or astringent mouth washes or both.

Several of the varieties enumerated as pyorrhea alveolaris are simple cases of gingivitis and stomatitis, due to passing constitutional disturbances or local irritants of various kinds, and which are readily amenable to simple treatment, such as clearing the bowels and the removal of local irritants, the cleansing of the mouth and teeth and the application of a 25% solution of iodine in glycerole to the inflamed tissues.

The tendency of so many pyorrhea specialists to magnify every little inflammatory affection of the oral cavity accompanied by pus into a form of pyorrhea alveolaris is a great mistake. True pyorrhea alveolaris is by no means as common a disease as some believe, and the sooner this is realized and corrected the better it will be for the honor and good name of the dental specialist.

The making and employment of autogenous vaccines should not be undertaken by anyone who has not received special and careful training in bacteriology and serum therapy. If vaccines are used they should be employed under the direction and supervision of a specialist in serum therapy. The opsonic index should be taken in every case

to be so treated, and this examination repeated after each dose of the vaccine, as this is the only safe and reliable method of ascertaining the effect of the previous dose and whether the dose needs to be increased or diminished to establish the positive phase in the opsonic index. Clinical symptoms are often misleading and positive harm may be done by relying alone upon these symptoms.

The photomicrographs in the Chapter on Pathology are so poorly executed as to render them practically valueless.

J. S. M.

Anatomy Descriptive and Applied. By Henry Gray, F. R. S., Fellow of the Royal College of Surgeons; lecturer on Anatomy at St. George's Hospital Medical School, London. New (English) edition, thoroughly revised and re-edited, with the Basle Anatomical Nomenclature in English, by Robert Howden, M. A., M. B., C. M. Imperial octavo, 1407 pages, with 1126 large and elaborate engravings. Cloth, \$6.00 net; leather, \$7.00, net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

The appearance of two new editions of Gray's Anatomy—one American and the other English, gives the student an excellent opportunity to make comparisons. In the new English edition the Basle Anatomical Nomenclature is given first place. It is given in English, and is a welcome advance over the terminology ordinarily accepted, as is still adhered to in the new American Edition, where the Basle Nomenclature is given second place in parentheses.

Prof. Howden has in this new English edition very consistently added at the end of the work a glossary of the Basle Anatomical Nomenclature. The equivalents of the three systems—the BNA in English, in Latin and, the ordinary terminology—are arranged in parallel columns, so that all can be commanded at a glance. This combination makes it very convenient for those who desire to perfect themselves in this subject.

In a recent review of the American Edition (Calif. State Jour. Med., vol. XI, p. 472) the writer made certain criticisms and laudatory comments, on the paucity and character of the illustrations, and general character of the work. The criticisms are equally applicable with slight modification, to the English Edition.

The latter begins with a chapter on Histology, followed by one on general Embryology and terminates with a consideration of Surface Anatomy and Surface Markings. The Applied Anatomy is given at the end of the different subdivisions, while the embryology of special structures is distributed through the text.

Some of the older illustrations are replaced by newer ones. There are 99 figures less than in the American Edition. Illustrations of transverse sections of the extremities are conspicuous for their absence. Figures 489, 528, and 529 very meagerly testify to the invaluableness of accurate illustrations of transverse sections of the extremities. Such figures should have replaced the suppressed illustrations of circles with the names printed on four sides, used in the preceding editions to show the relation of the larger blood vessels to the surrounding structures. Space compensation could have been obtained by curtailing the text. Descriptions cannot be compared to illustrations for building up mental pictures.

In the American Edition there is a marked increase in the number of illustrations of sections of the brain stem; in the English Edition there is not. Schematic diagrams adequately show the course of the nerve tracts and position of the central nuclei.

It is the usual thing to see students,—when at work on the structure of the brain-stem,—have as many as six text-books spread out before them. It requires a varying number to give the adequate information for reading serial sections that have

been stained by the Weigert-Pal method. Spalteholz's Atlas, Barker's Nervous System and a text-book on Histology, as Ferguson's are among the most useful. To be sure, it is excellent practice for a student to be forced to compare and correlate the subject matter as presented in a number of works; but then, have all students the means, opportunity and facilities for access to such an array of literature? By no means! It is the consensus of opinion among those who do study the subject that some one Anatomy should be adequate as a guide to what is wanted. An increased number of illustrations means increased expense. This can be kept down to a certain extent by curtailing the text, as before stated. Prof. Mall in commenting on an earlier American Edition of Gray, said: "More than 16 pages are devoted to the surface markings of the cerebrum, which could have been largely shown with illustrations without any text; while the internal structure of the medulla receives but 6 pages. The pons, medulla, and cord all suffer for want of good illustrations showing cross-sections." A text-book to have the greatest sphere of usefulness should be written to supply the needs of the student who works on his own initiative and the practicing physician who must from necessity possess a limited library. If it is purely for some advanced and limited purpose, it should be so stated in the title.

The chapter on cortical localization of function has been abbreviated, but compensation is manifest in the improved figures of the cerebral hemispheres (figs. 761 and 762). Figures 611 and 614, the arrangement of figures 1029, 1030, 1031, and 1032 are revelations of the improved methods.

The characteristic clearness of the text and general character of the previous editions are retained, but breathing an incipient transformation along modern methods. It was a retrogression to drop the diagrams showing the relation of vessels by the use of circles and names printed on the four sides, without offering something better; it was inertia not to have added new and accurate figures of transverse sections of the brain-stem; it was advancement in giving the BNA in English first place.

The author and publishers are to be congratulated on the excellent character of this edition. If the reviewer was asked which edition he preferred, his answer would be—the American edition for the treatment of the Nervous System; the English edition for the BNA. Otherwise there is no material difference.

F. E. B.

MEDICAL FEE SCHEDULE

(Offered by 16 insurance companies under the new employees' Compensation, Indemnity and Safety law.)

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Metatarsal or Metacarpal—			
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2 or more.....	15.00	1.50	1.00
Fingers or Toes—Single..	5.00	1.50	1.00
2 or more.....	10.00	1.50	1.00

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Both Bones.....	15.00	1.50	1.00
Femur	25.00	1.50	1.00
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Both Bones	15.00	1.50	1.00
Jaw	10.00	1.50	1.00

Ribs—One or More.....	5.00	1.50	1.00
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Finger or Toe.....	3.00	1.50	1.00
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Compound Fractures—Add 25 per cent. for First Aid Only.

Where the Fracture involves a Joint, \$5.00 extra.

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I hereby agree to treat medically and/or surgically, in accordance with the above schedule, any injured person who is sent to me, and for whose treatment any Insurance Company, a member of The Casualty Underwriters' Association of California, is responsible or interested, and I agree not to incur any further expense without the consent of the Insuring Company.

Surgeon.

Street and Number.

City or Town.

Witness.

Dated at....., this..... day of....., 191..

REPORT TUBERCULOSIS.

In public health activities the methods and spirit of the Tuberculosis Campaign are coming to be accepted throughout the United States. Tuberculosis being a disease in which prophylaxis is at present more effective than cure, and being one in which the infecting agent is known a system of prevention is being developed which can be applied to its control.

Of this system no one feature is more important than the registration of cases with a central bureau. In order to deal successfully with any disease one should know the extent and manner of its distribution.

With this fact in view a special effort is being made by the Board of Health of this State to obtain the name and address of every case of tuberculosis, as provided by the law of 1906, and a special bureau has been created by the Legislature with this for its first object.

It is the experience in all communities where this law has been effective that apparent objections have faded away in the light of experience.

Cases must be reported in writing to the local health officers who forward the list, together with that of other communicable diseases, to this office at the end of each week. The patient is not informed of the notification and in cases reported by physicians it is not the policy of the bureau to deal with patients except through or as requested by the physicians themselves.

Yours very truly,

BURT F. HOWARD,
Director, Bureau of Tuberculosis.

TRAINING IN HOME ECONOMICS.

The constantly increasing interest in the problem of right living demands trained workers in many fields. The State Normal School of Manual Arts and Home Economics at Santa Barbara, California, is offering courses in the many phases of Home Economics to fit interested students to meet the needs of the State, the community and the individual.

Courses have been offered since the establishment of the school by the Legislature of 1909 in the subjects required for Grade and High School Special Certification in Home Economics, with high entrance requirements, applying strictly to modern school regulations.

(The entrance requirements are as follows: Graduation from a college, university, normal or special school; or certificate of attendance for two or more years in such schools, with recommendations from the same; or successful teaching experience.)

The success of the graduates, evidencing the thoroughness of the training in all subjects, the school has broadened its scope to include some of the newer aspects of Home Economics for professional nurses, and for those women of maturity who would become directors of institutions through their knowledge and practice of Institutional Management.

The course most interesting to readers of this journal will be known as the "Nurse's Course in Home Economics," open at present to "registered nurses" who will be required to file the recommendation or credits from the Hospital from which they graduated, and a certification of their State registration, with any personal letters of recommendation which may be required.

The studies this first year will be adapted to the needs of the students as individuals, and as representing the demands made by the Hospital training classes over which the graduates of this course will preside as teachers and dietitians.

There will be no printed outlines for distribution

until the courses have been tried and standardized, but the character and reputation of the school is sufficient guaranty that the applicant will not only find her specific need, but will gain a broad comprehension of her subject.

Practical practice teaching in the hospitals will be required. Students will wear their uniforms in the Domestic Science and Dietetics laboratory.

A registration or diploma fee of two dollars is required. The duration of the course will not be less than forty weeks—divided into terms of ten weeks each—with intermissions of one or two weeks as arranged later.

There is no tuition. The fees will not exceed fifty dollars for the forty weeks. Twenty dollars, with the registration fee of two dollars, will be paid on entering. The balance will be paid at the close of fifteen weeks.

The school buildings, just completed, representing an investment of more than \$200,000, are built on one of the most beautiful sites in California and offer the most remarkable student life in the charming cloisters built round the spacious court from which one looks out on the restful blue of the Pacific Ocean.

There are no dormitories, but there are delightful apartments and bungalows conveniently located. The school maintains a dining hall or "Cafeteria" (conducted by the Institutional Management students and the entire group of Home Economic students, including those in the "Nurse's Course") where a noon meal will be served at cost.

Accommodations can be secured after arrival, and the cost per month need not exceed thirty dollars and may be much less.

The enrollment will be limited this semester to twenty students who will be selected on their applications and credentials.

The course will open February the sixteenth, registration day will be February the fourteenth or earlier. Registration closes February the twenty-eighth unless there are vacancies, when additional students will be received on promise to make up all the preceding work.

Students will be permitted to do a maximum of work in a minimum of time, therefore all must be physically fit to meet the obligations of their interesting studies and must send with their application a registered physician's certificate of good health.

All the school activities, entertainments and lectures are open to the nurses as is the well-selected school library and the city's public library. Santa Barbara offers a delightful climate and many delightful advantages.

Those desiring to enter should send for application blanks as soon as possible, stating name of Hospital diploma and years of experience in a Hospital or as private nurse, and notice of acceptance will be sent promptly on receipt of full information as to the applicant's qualifications.

The committee from the State Nurses' Association have visited the school and are familiar with the general scheme of the course.

Address all correspondence to Miss Ednah A. Rich, President, State Normal School of Manual Arts and Home Economics, Santa Barbara, California.

BOUILLON CUBES NOT CONCENTRATED MEAT ESSENCE.

The belief of many people that bouillon cubes are concentrated meat essence and of high nutritive value, has been shattered by a recently issued bulletin of the Department of Agriculture which says, that while they are valuable stimulants or flavoring agents they have little or no real food

value and are relatively expensive in comparison with home-made broths and soups. This bulletin (No. 27) compares the contents and food value of bouillon cubes with meat extracts and home-made preparations of meat.

The ordinary commercial bouillon cubes, according to this bulletin, consist of from $\frac{1}{2}$ to $\frac{3}{4}$ table salt. As they range in price from 10 to 20 cents an ounce, purchasers of these cubes are buying salt at a high price. The cubes do contain a small amount of protein (muscle-building material) in addition to their stimulating properties, and the makers of most of the cubes make no advertised claim that they are concentrated beef broth or essence. However, many housewives believe that they are and that they possess high nutritive value, especially for invalids. This is not the case. The fact that the cubes sell for from 1 to 2 cents each, and each cube makes a cup of broth, misleads the housewife into believing that she is securing meat extract cheaply when really she is buying it in an expensive form.

According to analyses of these cubes, besides the common salt which constitutes from 49 to 72% of the total weight, the amount of meat extract ranges from 8% in the poorest brands to but 28% in the very best. The third important ingredient is plant or vegetable extract which constitutes from 3 to 30%. This plant extract is useful because of its flavoring properties but has slight, if any, nutritive value.

INTERESTING FRAUDS.

Deafness-Cure Frauds.—The name of the deafness-cure quack is legion. Some carry an alleged cure for deafness as a "side-line," some sell on the mail-order plan their worthless "course of treatment," while still others, and these probably are in the majority, dispose of, at an exorbitant price, devices that are trivial, worthless and often dangerous. The following are some "deafness-cure" concerns: Dr. L. C. Grains Company (formerly Dr. Guy Clifford Powell), Chicago; Dr. Edward E. Gardner, New York City; George P. Way, Detroit, Michigan, and George H. Wilson, Louisville, Ky. (Jour. A. M. A., Nov. 1, 1913, p. 1645).

The Friedmann Cure.—After studying the cases inoculated by Dr. Friedmann at Montreal, Ottawa, Toronto and London, Ontario, a committee of the Canadian Association for the Prevention of Tuberculosis has reported unfavorably on the treatment (Jour. A. M. A., Nov. 1, 1913, p. 1648).

Trypsogen.—Besides exploiting a clay poultice, "Antithermoline," the G. W. Carnrick Company appears to be chiefly concerned in the promotion of "internal secretion" specialties. Thus it markets the diabetes remedy, "Trypsogen" tablets, said to contain "the enzyme of the islands of Langerhans with the tryptic and amylolytic ferments of the pancreas" along with gold bromid and arsenic bromid; Secretogen Elixir, said to be "prepared from gastric secretin obtained from the pyloric antrum and pancreatic secretin from the duodenum, combined with the enzymes of the peptic glands, and one-twentieth of one per cent. HCl"; Secretogen Tablets, said to be "prepared from prosecretin and succus entericus obtained from the epithelial cells of the duodenum, combined with pancreatic extract"; Kinazyme, "a preparation of extract of spleen, reinforced with trypsin, amyllopsin and calcium lactate." While great claims have been made for Trypsogen and while it has been most widely advertised it is the opinion of the most eminent students of the question that pancreas is not efficacious in diabetes. Trypsogen should be con-

sidered as an unscientific shot-gun mixture. When the Council on Pharmacy and Chemistry paid less attention to the therapeutic worth of a proprietary preparation, both Antithermoline and Trypsogen were admitted to New and Nonofficial Remedies. They were dropped some years ago, when the Council revised its rules (Jour. A. M. A., Nov. 1, 1913, p. 1649).

Radio-Active Waters.—All naturally occurring waters, even rain water, are somewhat radio-active. While the waters of Hot Springs, Ark., have been investigated by the Department of the Interior, this information has been suppressed "for administrative reasons." It is stated only that the waters are "radio-active to a marked degree," a statement which might have emanated from a patent medicine manufacturer (Jour. A. M. A., Nov. 1, 1913, p. 1649).

"Therapeutic" Names.—Claiming that physicians demand that they be supplied with "a pill for every ill" most pharmaceutical houses supply "Pills Gonorrhea," "Pills Spermatorrhea," "Pills Leukorrhea," "Pills Dysmenorrhea," etc. Therapeutically suggestive names for medicines lead to thoughtless use by physicians and to counter-prescribing by druggists. That the use of therapeutic titles is not an economic necessity is illustrated by the fact that E. R. Squibb & Sons are discarding such titles (Jour. A. M. A., Nov. 1, 1913, p. 1650).

Mouth Washes.—Recent investigations seem to show that adherence of mucin caused decay of the teeth. So-called antiseptic mouth washes and alkaline washes do not remove this mucin and therefore do not prevent decay of the teeth. The vegetable acids, such as fruit juices and diluted vinegar, are the most successful agents for the removal of mucin (Jour. A. M. A., Nov. 8, 1913, p. 1718).

Pennyroyal, Tansy and other "Emmenagogue Oils."—An examination of the oils of Pennyroyal, tansy, savin, rue, thyme, turpentine and of apiol proves that they have no specific or directly stimulating action whatever on the uterine muscles; on the contrary they prohibit the contraction of the uterus and even paralyze it. If these oils exhibit any emmenagogue or abortifacient action whatever, it is due to a general constitutional poisoning or gastro-intestinal irritation and not to any specific action in accord with the intent for which they are sometimes administered (Jour. A. M. A., Nov. 8, 1913, p. 1725).

Mouth Washes.—Such polypharmacy as is represented by the complex solutions, official and proprietary, used as mouth washes is nonsense. In them the value of useful ingredients is obscured by the useless shrubbery which surround them. A dash of this and a dash of that in these mouth washes or gargles is simply playing to the galleries (Jour. A. M. A., Nov. 15, 1913, p. 1812).

The action of Atophan.—It has been recognized that the administration of Atophan increased the elimination of uric acid and that there was a possibility that a greater production of uric acid is induced by the drug—a result which would scarcely encourage its use in therapy. Recent investigations, however, favor the view that the drug merely stimulates the kidneys to abstract from the blood a greater quantity of the purin end-product than it normally would (Jour. A. M. A., Nov. 15, 1913, p. 1818).

Baughn's Pellagra Remedy.—A booklet issued for Baughn's Pellagra Remedy, American Compounding Co., Jasper, Alabama, suggests symptoms of all kinds as an indication of pellagra. If you have any of these, the inference is that the "grim specter," pellagra, has you in its grasp! Horror

is piled on horror in the most approved "patent medicine" style, reaching as a grand climax a description of "the last stages" and closing with the peroration: "And the last stage, till now—the MAD HOUSE and DEATH." As the exploitation of this nostrum interfered with the attempts of health officers to eradicate pellagra in Alabama, it was analyzed in the A. M. A. Chemical Laboratory. The nostrum comes in two forms, capsules and a powder for external use. The capsules were found to contain charcoal, basic iron sulphate and a little quinine. The powder was composed of common salt and basic iron sulphate (Jour. A. M. A., Nov. 15, 1913, p. 1828).

Regulin.—Regulin is agar-agar (N. N. R., 1913, p. 20) to which some cascara preparation has been added. The product at one time was described in the Appendix to New and Nonofficial Remedies as follows: A mixture of agar-agar in a dry form with extract of cascara sagrada representing 15 per cent. of an aqueous fluid extract of cascara sagrada (Jour. A. M. A., Nov. 15, 1913, p. 1832).

Waterbury's Compound.—Waterbury's Compound—called Waterbury's Metabolized Cod-Liver Oil Compound until the A. M. A. Chemical Laboratory showed it contained practically no cod-liver oil—was one of the proprietary preparations advertised both in "display" form and also in the form of an "original article," in the Army and Navy Medical Record—a fraudulent publication that offered its editorial pages for sale. Physicians are now receiving from the Waterbury Chemical Company, a reprint of what purports to be an editorial from the Army and Navy Medical Record, entitled "One of America's Most Valuable Preparations." The preparation, of course, is "Waterbury's Compound" (Jour. A. M. A., Nov. 15, 1913, p. 1830).

Sensitized Virus-Vaccine.—Besredka asserts that the injection of living germs sensitized in certain ways produces a more substantial immunity and greater production of antibodies than the injection of germs killed by heat or in other ways. In apes sensitized typhoid bacilli gave absolute protection, causing no fever and no reaction, while killed bacilli failed to protect adequately. As a result of these experiments a number of "sensitized virus-vaccines" have been prepared and the antirabic vaccine used in France is now a sensitized virus. Before the employment of the sensitized typhoid virus-vaccine can be considered, much evidence must be produced that there is no danger of producing typhoid carriers and that this vaccine gives any better protection than the vaccines now in use. Similar objections hold against other vaccines of this kind and at present the obstacle to the use of such living germs for protective purposes would seem to be quite impassable (Jour. A. M. A., Nov. 15, 1913, p. 1814).

Berledets.—This is an anti-fat remedy sold under the claim that dieting and exercise are unnecessary, but the directions for which recommends moderation in diet and free exercise. Examination in the A. M. A. Chemical Laboratory showed the nostrum to consist of tablets, each containing about 9 grains boric acid, along with corn starch and milk sugar. It is evident that Berledets will cure obesity only by seriously interfering with digestion (Jour. A. M. A., Nov. 22, 1913, p. 1917).

The Morley Ear-Phone.—The Morley Invisible Ear-Phone, Morley Company, Philadelphia, Pa., is nothing more or less than the old, well-known Toynbee artificial drum-head. It consists of a circular piece of oiled silk about one-quarter inch in diameter, through the center of which a piece of silk thread has been passed, for the purpose of holding the oiled silk in position. A small piece of flexible tubing comes with it to aid in inserting

the device in the ear. The indiscriminate sale of a device of this sort, especially at exorbitant prices and under fraudulent claims, is not merely an injury to the purse, but a distinct menace to the health of the deaf (Jour. A. M. A., Nov. 22, 1913, p. 1919).

Veroform Germicide Omitted from N. N. R.—Veroform Germicide is described in New and Nonofficial Remedies, 1913. It is a formaldehyde soap solution, containing 20 per cent. of formaldehyde. The report of the U. S. Public Health Service on commercial disinfectants having shown Veroform Germicide to have a phenol co-efficient of but 0.43, the manufacturers of the preparation were asked to present evidence to justify the term "germicide" in the name and the claim that it has more bactericidal effect than phenol. As the Veroform Co. produced no evidence to substantiate the questioned claims, the Council of Pharmacy and Chemistry voted to omit the preparation from New and Nonofficial Remedies (Jour. A. M. A., Nov. 22, 1913, p. 1920).

Pulmonol.—Pulmonol is a consumption "cure" put out by the Pulmonol Chemical Co., New York. As always in the case of consumption "cures," the testimonials issued may be divided into two classes, those who really had tuberculosis and those who did not have it. Investigation of some of the testimonials given some time ago, generally show that those who relied on the nostrum are dead while those who got well never had tuberculosis. Examination in the A. M. A. Chemical Laboratory indicated that each fluid ounce of Pulmonol was approximately equivalent to 29 gr. of potassium guaiacal sulphonate, 10 gr. of sodium benzoate and 1-24 gr. of strychnine sulphate (Jour. A. M. A., Nov. 29, 1913, p. 1998).

ERRATA.

On page 32 of the January issue the sentence beginning with "The next was botanies," should read "The next word was botanies." The sentence beginning with the "Greek Touy" should read the "Greek töme." The sentence beginning with "Sume a word" should read "such a word." The sentence beginning with "wee-kis-im" should be spelled "kiss-im."

NEW MEMBERS.

Bohm, Jno. E., San Francisco.
Ruggles, Howard E., San Francisco.
Slemons, J. M., San Francisco.
Walton-Dorn, Dora I., San Francisco.
Walton, G. E., Oakland.
Meads, A. M., Oakland.
Campbell, W. H., Oakland.
McCracken, Wm. B., Berkeley.

RESIGNED.

Fowler, W. S., Bakersfield, Cal.
Hirschler, D. Lee, Norfolk, Va.

DEATHS.

Ulyot, Thos. Henry, Monrovia, Cal.
Miller, C. C., Boulder Creek, Cal.
McDonald, J. A. J., San Francisco.
Ward, W. H., died in Long Beach, Cal.
Thurston, Wm., died in Orland, Cal.
Godfrey, E. L. B., Pasadena, Cal.
Sawyer, A. F., died in address unknown (formerly San Diego).
Wilhelm, August, San Francisco.
King, E. W., San Francisco.
Stearns, Wm. H., Los Angeles.

California State Journal of Medicine.

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Notify the office promptly of any change of address, in
order that mailing list and addresses in the Register may
be corrected.

VOL. XII MARCH, 1914. No. 3

EDITORIAL NOTES

WHAT IS THE VALUE OF ANYTHING?

A very great objection to the schedule of fees offered by the associated insurance companies for the services of physicians under the new insurance and compensation act, is the fixing of a flat fee. Fees for professional work cannot be absolutely fixed; as a matter of fact, the value of everything is relative and the old saying of "charging what the traffic will bear" is fundamentally true and right. The freight rate on silk is more per ton than that on pig iron; a lawyer gets a bigger fee for incorporating a fifty million dollar concern than for a thousand dollar company; a surgeon is entitled to a larger fee for removing the appendix of a millionaire than for taking out that of a car conductor. Some of our best surgeons have a system of charging that is based upon the income of the individual and represents one or more month's income for the work to be done, and this seems to be a reasonable and equitable way of fixing the fee. It is foolish for any one to say that it is as much work and strain and responsibility in the case of the poor man as in that of the rich man. Just as much coal is burned in hauling a ton of silk as in pulling a ton of pig iron over a certain distance. Therefore, the contracting to do certain professional work for certain fixed fees, irrespective of the income of the patient, is fundamentally wrong and vicious.

SQUEEZING THE COMPANIES.

Dr. French read a paper on the subject of industrial compensation, insurance, etc., before the Los Angeles County Medical Association and, in the main, took the attitude voiced in your JOURNAL in connection therewith. One point he brought up, however, is new in so far as it has not been mentioned in these pages; that is, the fact that some physicians will try to make the bill unduly large if they know that an insurance company of large capital is going to pay out the money. Probably that is, in a few cases, true. Physicians are average men and probably have but a little more than the average rate of honesty; in every walk of life and in every calling we shall find rascals and dishonest men; occasionally one reads of some clergyman who has been detected leading an immoral or a dissolute life, but because of that we do not condemn all clergy nor do we think of them as all being dissolute. Every practicing physician does a great deal of work for nothing, and the very nature of his calling leads him to try to think more honestly than does the daily occupation of the average man in any other calling; therefore we truly believe that physicians are to some extent more honest in the average than those in other walks of life. But even at that there will be some cases of attempted grafting, no matter what is done. The plan presented in this issue and strongly recommended to county medical societies for their consideration, will, we think, do away with the charge of possible graft. Still, it seems to be a peculiar phase of human nature that every one must try to get "something for nothing," particularly when it is a corporation that is to be depleted. People who would never put a hand in an individual pocket, will avoid paying car-fare if they can, and we all know the predatory instinct that removes things from hotels! Doubtless many physicians who would be perfectly honest with an individual patient would not think it wrong to try to "stick" a corporation. It is a queer people!

A SUGGESTION ABOUT FEES.

Why not carefully consider and present to the various insurance companies a proposition something like the following; it will not only do away with the wrong idea of fixed, flat fees, but it will also do away with the serious harm to a number of physicians which is a result of forcing a certain company physician upon all patients covered by that company. Let the injured person have the attention of any member of the county medical society who will agree to make his charges commensurate with the income of the patient and not try to fix them according to the capital stock of the insurance company. In the event of a dispute

arising between a member of the society and an insurance company, turn the matter over to the county medical society for adjustment. It is more than possible that some physicians would make unfair and too large charges, but it is hardly imaginable that a county society would do anything out of the way or unjust and would not allow an account to be approved if it were obviously too large or dishonest or not commensurate with the income of the patient. This matter has been discussed with the managers of several insurance companies and is entirely satisfactory to them; if it is satisfactory to the various county units and if they will undertake to make the proposition to the insurance companies, doubtless nearly if not quite all of them will be glad to adopt it. One plan that is being followed by at least some of the companies, is exceedingly bad. They contract with one physician to handle all of the work in the state at a fixed amount and he pays local doctors—as little as he can get them to agree to take! Los Angeles has acted wisely in condemning this practice and the Council of that Association has adopted very clear resolutions setting forth their stand in the matter, which resolutions appear elsewhere in these pages.

IMPORTANT BUSINESS.

Not in the last twenty years have so many questions of vital importance to the medical profession and to the members of our society presented themselves as at the present time. They will come up for discussion and for action at the annual meeting next month, and every county society should be represented and every delegate in his place on the night of April 14th (Tuesday) at the Hotel Potter, Santa Barbara. Attacks upon medical men in the form of suits for alleged malpractice have increased enormously and reached serious proportions. Not one such suit was justified and not one was lost by us during the past year. Nor do our attorneys fear that such suits will go against us or be held to stand on appeal. But they cost money and time and trouble to defend, and if they are not carefully studied and defended, and verdicts allowed to go against physicians, there will be a perfect deluge of such actions and our profession will be mulcted of many thousands of dollars. Then we shall have the question of fees under this insurance act and the manner in which practice is diverted, together with the relation of this cheap work to subsequent malpractice suits which the society will have to defend, a most serious question. Should a member who signs this fee contract be allowed to keep his membership, and if he is, should he be defended by the society in case of a suit arising from such work? Do not fail to be at the meeting and let each county unit see to it that it elects delegates who will surely attend. What construction shall be put upon the income tax and how will it affect our relations with our patients? Shall we notify them that the law requires us to sue for an account in order to prove

that it is bad? Shall we establish a credit department in connection with the work of the State Society? There are certainly plenty of very important questions for the House of Delegates to consider.

TUBERCULOSIS; A ROUSING MEETING!

In the advertising pages of this issue will be found a page devoted to some remarks about the tuberculosis situation that are important to all of us and that should be read by all. At the next meeting, Santa Barbara, Thursday, April 16th, the whole day will be devoted to a series of papers by distinguished men dealing with the tuberculosis question. This meeting is arranged by the California Association for the Study and Prevention of Tuberculosis, and it is hoped that it will put new and enthusiastic life into that association and into the members of our society in their relations with the association. Look over the program as published herein.

"WHISPER HIM TO DEATH."

A school teacher in Alameda was charged with misbehavior with girl pupils; there was a thorough investigation and the charge was found to be absolutely groundless. Concerning the matter the San Francisco *Examiner* had this to say: "There was absolutely nothing in the charges, which seem to have been the sole work of a mischief-making and meddlesome female politician, but Principal Cohn will suffer more or less from the undeserved stigma anyhow. Malice finds no accusation so easy to bring and innocence no accusation so hard to dispute as is an accusation of sexual wrongdoing. There are always plenty of evil minds ready to believe the worst imputations of this kind, though made by the meanest malice and with no jot or tittle of truthfulness." The *Examiner* might have gone on and said that the very people who take a delight in circulating such unfounded and dastardly stories know all the time that the stuff they talk and distribute is nothing but lies, lies from beginning to end. Many a man has been ruined by just that sort of thing; a few survive a good deal of it and come out, after the years have gone by, stronger and bigger than they would have been. It is nearly always impossible to find the originator of these whisperings, and so there is nothing to be done in the way of fighting back; to walk straight, look every one in the eye and wait for time to make some of the whisperers ashamed of themselves, is about all the victim can do. Some years ago a physician in this State was completely ruined in this dastardly fashion; more recently it was tried on a prominent physician in a southern city, but he survived, as did two physicians in San Francisco who were also made the objects of such malicious attack. There are no words of contempt too strong to be applied to those who are so loathsome as to pass on this sort of thing; man is the only animal that can become so degraded as to fight in this way.

THE INCOME TAX MUDDLE.

Under the term "Instructions" we read that "Persons receiving fees or emoluments for professional services, as in the case of physicians or lawyers, should include all actual receipts for services rendered in the year for which return is made, *together with all unpaid accounts*, charges for services, or contingent income due for that year, if good and collectible." And in the next paragraph we read: "Debts which were contracted during the year for which return is made, but found in said year to be worthless, may be deducted from gross income for said year, but such debts can not be regarded as worthless *until after legal proceedings* to recover the same have proved fruitless, or it clearly appears that the debtor is insolvent." This is rather an awkward situation. We have been urging our members not to sue to collect accounts until more than a year has elapsed since the services were rendered for the reason that, at the end of a year, the period in which a counter claim for damages might be legally brought, has expired and a suit for damages would be thrown out without any danger of a trial of the case. There are two ways of meeting the difficulty. In the first place, at the end of the year, one might charge off his books such accounts as he considers hopeless, and then if, in the next year he collects them direct or by suit, he can include the money in that year's return. Secondly, he can include all such accounts in the current year's statement, and if in the course of the next year he sues and does not collect the bill, he can deduct the amount from his receipts as a loss during the year. Either plan would be perfectly satisfactory and would be honest to both the individual physician and to the government—and it would not cause a number of suits for alleged malpractice to be brought. When a physician sues a disgruntled patient for an overdue bill, that patient is very apt to file a cross complaint which is in the nature of a counter suit for damages, alleging that the physician's treatment was negligent. We have had many suits of this character to defend and some of them have been very bitterly fought. (In passing, and parenthetically, let us urge you always and under all circumstances to have an X-ray plate made in every case of fracture—and keep the plate in safety.) One good may result from this requirement of the income tax; it may make many doctors more careful in their bookkeeping and it may tend to force them to follow up their accounts more carefully and make a greater effort to collect amounts due them. Certainly, if they put into the return of this year an account that they think is collectible they are going to make a pretty strong effort to collect that account next year. Opinions are at variance as to just what this "income" means; in the case of professional men, does it not rather mean the amount of actual money received during the year? Many lawyers think that it does and that the authorities are without satisfactory support in contending otherwise. Cer-

tainly it is a matter of mere common sense to consider one's "income" the amount of money he has received during the year and not to include in that the amount in addition which may be owed to him. Cash is cash but common sense is not always law.

"DISEASE AND ITS CAUSES"

is the title of a recent volume in the Home University Library of Modern Knowledge, Henry Holt & Co. Professor Councilman very modestly presents the subject of disease as "life under conditions which differ from the usual," and has succeeded in giving us a little book that should be read by every thinking layman; indeed, physicians themselves will find an immense amount of material for careful consideration in this present work. Were it possible to get two or three million people to read such a book as this and really understand what the nature of the make-up of the body is, and what disturbances it is subject to, we would hear very little about so-called Christian Science, "New Thought" and the rest of the awful twaddle that goes about; also, we should find fewer people cursing the doctor because every person is not cured of every ailment and so made to live forever. The book is delightfully written and we trust that it may have a large circulation among the lay public; help it along; help educate your patients so that they may come to know even a little something about the nature of "Disease and Its Causes."

NOTICE!

Forty-Fourth Annual Meeting.

SANTA BARBARA, HOTEL POTTER,
APRIL 14, 15 AND 16, 1914.

RAILROAD RATES. The customary railroad rate of one and one-third fare, provided 50 or more are in attendance, will prevail. When you buy your ticket to go to Santa Barbara, pay the full fare and get a receipt-certificate. When you get to Santa Barbara, present this to the Secretary to be signed and then when you get your return ticket, hand this receipt to the agent and he will give you a return ticket for one-third the full fare. Do not fail to get the receipt-certificate or to have it signed by the Secretary, for if you do, you have no redress.

HOTEL RATES. The rates this year are on the European plan and do *not* include meals.

Room, without bath, one person,	\$1.00
Room, without bath, two persons,	1.50
Room with bath, one person,	2.00
Room with bath, two persons,	3.00

Those who desire may be accommodated on the American plan, in which case add \$2.50 per day per person to the above rates.

SOME REMARKS ON THE INDUSTRIAL INSURANCE ACT.*

By FRANK P. TOPPING, M. D., San Francisco.

The evolution of the Industrial Compensation Act is interesting—to say the least; quite interesting from many angles. Interesting to the members of the medical profession, to the casualty and liability companies, to the workmen as individuals, and should be interesting to the various labor unions whose members will constitute the vast majority of all who will (or are supposed to) benefit by the Boynton Act—a law.

I trust my remarks will not prove offensive to the Industrial Accident Commission, whose members I believe to be working for a just interpretation and enforcement of the law.

This humble article is respectfully dedicated to the medical profession, especially to the members of the State and various County Medical Societies; and to you, Mr. Insurance Man; and to you, Mr. Labor Union Man. Whether it is, or is not, a wise law, with far-reaching benefits to humanity, does not come within the scope of this paper. Suffice it to say that it *is* the law, and as the *law* it *must* be obeyed and enforced.

It has been often stated (by persons who do not know) that there is a "Doctor's Trust"—a "Doctor's Union." Would that it were so, for thereby many of the hardships and much of the injustice resulting from this law could then be easily controlled and rectified. As a matter of fact, in San Francisco County there are (according to the last published official list of the state directory) 1119 persons entitled to practice Medicine of whom 560 are members of the County Medical Society. With 50% of the profession joined in an association, it would appear that some concerted action to secure justice to the medical profession *could* be taken.

To ask a medical man who respects himself and the profession to which he belongs to accept the starvation fees which are submitted by the State Commission and cut still lower by the 14 or more liability companies is, to say the least, utterly foolish and humiliating. To offer \$1.50 for hospital or home visit; \$1.00 for an office visit with other compensation in proportion, is a cheerful picture to contemplate in these days of the high cost of living!

Is there any sense in the graduated scale of fees? For example: hospital or home visit \$1.50 for fractured skull, \$2.00 for amputation of the forearm. I maintain that a fractured skull is a very serious injury. The trephining of a skull requires the highest surgical judgment and skill (for which the surgeon is paid \$50). Many patients suffering from a fractured skull die, with or without operation. Why then should a doctor be paid only \$1.50 for visiting such a case, as against \$2 for certain other cases? Distance, time, professional judgment are required as in other cases, to say nothing of an equal liability for malpractice.

Why should you, Mr. Medical Man, visit a

patient, say in an outlying district, in the interest of a prosperous dividend-paying casualty company with a large capitalization and reserve fund; with some of the highest salaried men as managers, resident agents, etc., in their employ for the paltry sum of \$1.50 to save a human life? A visit that may take you from your practice for two or three hours. A visit that may save the company hundreds of dollars.

And why should you, Mr. Working Man, expect a first-class service to possibly save your life for the sum of \$1.50? Do you hold your life so cheap? Do you regard the use of your right arm (on which you may depend to earn your daily bread) as worth \$10 or \$12.50? Are you not entitled to the best service obtainable? Yes? Then make the company who insures your employer obtain the services of men capable of giving you the treatment to which you are entitled, instead of the cheap service, based on the cut-rate, non-living wage the company offers. Think this over, Mr. Working Man!

And you, Mr. Insurance Manager! Your position could be filled by a man earning one-third of your salary; but how filled? The salaries of your entire office and field staff could be cut one-half or one-third; but what service would you expect? What service would you secure? When a man applies to take charge of your office, what qualifications do you require? Should not the same relative requirements of your medical staff be looked into, instead of unloading your medical responsibilities on a 10, 12 or 15% premium basis; or proposing a scale of compensation, which, were it applied to insurance rates, would throw your company out of the board of underwriters? Think this over, Mr. Insurance Man!

Mr. Will J. French, Commissioner of the Industrial Accident Commission, in an address delivered before the San Francisco County Medical Society on January 6, 1914, stated: "As in Massachusetts, we propose to have the payments based on what would be charged the injured men and women should they have to pay the cost out of their own pockets. This is entirely a fair proposition. It is what you do right along."

Mr. Commissioner, the schedule contemplated by your board is far less than would be charged by any reasonable, capable medical man for the average working man. Your schedule and that of the liability companies may (we will admit for the sake of argument) be just for the man earning \$3 per day—a man with a family; but how about the man earning \$4, \$5, \$6, or \$7, some without a family? Does the rate alter in proportion?

I think that the minimum fee is your idea, to govern all. It is not for you to revise our fee bill, nor to establish our fees. You have proposed the minimum (barring charity). Medical men as a class the world over do much work for nothing. No decent, self-respecting medical man ever refuses to treat the deserving poor without any thought of remuneration; nor refuses to administer to their ills; nor to answer calls at any reasonable hour of the day or night when occasion demands. To help them in many other little

* This article is not written in a spirit of vindictiveness or sarcasm, but to bring forth some points relating to Industrial Insurance for the consideration of the various Liability Companies and others who may be interested.

ways; to give but one class of service—the best in a man—is our privilege. But, Mr. Commissioner, there is a difference in *this* rate, and the rate that should be charged to a man earning at the minimum scale \$3 per day, and ranging as high at \$7 per day (and *getting* it). It is true that we treat some people for nothing. We are glad to do it and are proud of it. It is true that we reduce our fees in some cases, which we deem deserving, to an amount even less than the fee schedule proposed; but to expect us to enter into contracts with the large indemnity companies (who, by the way, are not in business for charity) or to treat cases for the State at these absurd rates is more than the average self-respecting practitioner should be asked to do. It is more than you have a right to ask, Mr. Commissioner! It is more than you have a right to demand, Mr. Insurance Man! It is not the service you are entitled to, Mr. Working-man!

Mr. French also states in his address to the County Medical Society above referred to: "We have consulted the best doctors in San Francisco, men whose names are known all over the land. They assure us that we are right in our position, and that the profession will endorse our stand."

Mr. Commissioner, I challenge that statement. It would be interesting to have you furnish us with a list of some of these "best doctors" "whose names are known all over the land"; men who endorse you in securing a cut-rate service of \$30 for a capital operation; \$1.50 for a hospital or home visit; \$1 for an office visit; \$1.50 for passing a catheter (note that, ye medical men), and \$3 for a "complete physical examination with written report."

On receipt of this list of "best doctors"—if there are any among them belonging to the San Francisco County Medical Society—I think it would be in order to introduce a motion that their membership in the County, State and American Medical Association be cancelled, together with such others of our members who are accepting service under this starvation schedule.

In Conclusion: If the Commission honestly believes that under their adopted schedule, they can secure the "best care" obtainable for the injured working-man or woman, I think the commission is mistaken. Time will verify or disprove this.

If the casualty companies will look with as much care into the honesty, ability and other qualifications of their medical staff as they do in appointing their clerical staff, they will see without further argument, that they are securing cheap service commensurate with their own cheap schedule. If these companies are *really* honest (as I am assured they are), in desiring to give the injured wage-earner adequate care, I would urge that they look carefully to see that a medical gold-brick is not being handed them. The cheapest service in the beginning is sometimes the most expensive in the long run.

If the organized working-man is convinced that in order to economize, his employer, or the company insuring him, is furnishing inferior service, when he is entitled to that which is adequate, then

this article will have, at least, accomplished something.

The medical profession is sick; far more indisposed than any individual or organization for which its services are required. It needs treatment; careful treatment. It needs organization; the same kind as 80% of the men have to whom doctors are called to administer. It needs a purgative; to be purged of the members who are accepting these cut rates, including "some of the best doctors in San Francisco. Men whose names are known all over the land."

While the society has fought against contract practice and hospital associations, and waged a bitter war to bring the insurance companies up to a \$5 examination fee for life insurance, irrespective of the amount of the policy, and this JOURNAL,—*your* JOURNAL, Mr. Medical Man,—has given it backing and loyal support and publicity, it would seem that we could, at least, cast from our midst those men who are opposed to the best interests of the medical profession, and whom the society will have to defend in case damage suits are brought, *and there will be some.*

(Since this article was written there has come to our notice a statement from the medical director of the Industrial Accident Commission, in which some of the abuses above referred to have been recognized, indicating an earnest desire to improve the situation from a medical standpoint.—F. P. T.)

¶ FORTY-FOURTH ANNUAL MEETING OF THE MEDICAL SOCIETY, STATE OF CALIFORNIA, SANTA BARBARA, HOTEL POTTER, APRIL 14, 15, 16, 1914.

PROVISIONAL PROGRAM.**FIRST DAY.**

Tuesday, April 14, 1914.

9:30 A. M.

Addresses and Reports of Committees.

1:30 P. M.

Symposium on the Relation of Joint and Endocardial Affections to Local Infections (3 papers).

1. The Relation of Local Infections to Joint Affections (15 minutes).
Leonard W. Ely, San Francisco.
2. (Title to be announced) (15 minutes).
C. C. Crane, San Francisco.
Discussion opened by John Carling (Los Angeles).
3. Early Symptomatology of Bacterial Endocarditis (15 minutes).
E. C. Dickson and R. L. Wilbur, S. F.
4. Botulism (15 minutes).
Thomas Williams, Palo Alto.
5. Diagnosis, Significance and Treatment of Bronchial Glands in Infancy and Childhood (15 minutes).

William Palmer Lucas, San Francisco.

6. Leukocytic Extract and the Treatment of Pneumonia (15 minutes).

Hary B. Reynolds, Palo Alto.

Discussion opened by W. H. Manwaring (Palo Alto).

8 P. M. **Business Meeting.****SECOND DAY.**

Wednesday, April 15, 1914.

9:30 A. M.

1. The Use of the X-Ray and Mesothorium in Gynecological Practice (10 minutes).
Henry Kreutzmann, San Francisco.
2. Management of Three Cases with Relaxed Pelvic Outlet (10 minutes).
Rexwald Brown, Santa Barbara.
3. A Rare Cause of Dystocia (15 minutes).
J. M. Slemons, San Francisco.
4. Uterine Replacement; with particular attention to the Butean Operation. (Illustrated with Lantern Slides (15 minutes).
C. A. Dukes, Oakland.
5. The Dangers of Vaginal Examinations During Labor (10 minutes).
Austin Miller, Porterville.
6. Two Unusual Cases of Hernia (10 minutes).
J. J. A. Van Kaathoven, Los Angeles.
7. Shockless Surgery (10 minutes).
A. B. Cooke, Los Angeles.

1:30 P. M.

1. Paroxysmal Hemoglobinuria Treated by Salvarsan with Disappearance of the Characteristic Blood Reaction (15 minutes).
Walter Brem, Los Angeles.
2. Report of a Case of Blastomycosis (10 minutes).
W. W. Roblee, Riverside.
3. The Function of the General Practitioner in Relation to the Study and Prevention of Nervous and Mental Diseases (15 minutes).
Harold Wright, Santa Barbara.

4. Report of a Case of a Child Dying from an Ant Bite (10 minutes).
T. C. Edwards, Salinas.

5. (Title to be announced) (15 minutes).
William E. Tebbe, Weed.

6. Photography in Relation to the Medical Sciences (10 minutes).
H. D'Arcy Power, San Francisco.

8 P. M. **Business Meeting.****THIRD DAY.**

Thursday, April 16, 1914.

9:30 A. M.

California Association for the Study and Prevention of Tuberculosis (all day).

1. Induced Pneumothorax.
Edward von Adelung, Oakland.
2. The Earliest Manifestations of Tuberculosis and Treatment.
G. E. Ebricht, San Francisco.
3. Social Insurance as Applied to Tuberculosis.
John N. Force, Berkeley.
4. Tuberculosis in Relation to the Eye and Ear.
George H. Kress, Los Angeles.
5. Why are Better Results Not Obtained in the Treatment of Tuberculosis?
F. M. Pottenger, Monrovia.
6. Arequipa—An Economic and Sociological Experiment in the Care of Tuberculous Working Girls.
P. K. Brown, San Francisco.
7. Surgical Stiffening of the Spine in Spinal Tuberculosis—Report of Cases.
J. T. Watkins, San Francisco.
8. (Title to be announced).
W. R. P. Clark, San Francisco.
9. (Title to be announced).
George H. Evans, San Francisco.
10. Report of President.
11. Report of Secretary.
12. Report of State Bureau of Tuberculosis.
B. F. Howard, Sacramento.

1:30 P. M.

Symposium on Gastroduodenal Ulcer.

1. Symptomatology and Diagnosis (15 minutes).
Emil Schmoll, San Francisco.
2. Roentgen Ray Diagnosis (15 minutes).
Walter Boardman, San Francisco.
3. Medical Treatment (15 minutes).
L. G. Visscher, Los Angeles.
4. Surgical Aspects (15 minutes).
R. C. Coffey, Portland, Ore. (by invitation).
5. Surgical Aspects (15 minutes).
W. W. Richardson, Los Angeles.
6. Duodenal Feeding; Practical Demonstration (15 minutes).
H. G. Watson, Los Angeles.

Following is the provisional program of the Ear, Nose and Throat Section of the State Society. Any additions may be sent to Dr. H. B. Graham, 209 Post St., San Francisco:

1. Luc-Caldwell Operation; Indications and Technique.
Geo. W. Caldwell, Oakland, Cal.
2. Diagnosis and Treatment of Nasal Sinus Disease. Lantern Slide Demonstrations.
John J. Kyle, Los Angeles, Cal.

3. The Surgical Approach in Cases of Nasopharyngeal Fibroma. Lantern Slide Illustrations.
Henry Horn, San Francisco.
4. Intranasal Operation for Dacryostenosis with Case Histories.
L. D. Green, San Francisco.
5. The Influence of the Resection of the Septum on General Diseases.
H. Y. McNaught, San Francisco.
6. Report of Two Cases of Thrombosis of the Lateral Sinus.
Cullen F. Welty, San Francisco.
7. Report of an Unusual Case of Labyrinthine Deafness.
Geo. P. Wintermute, San Francisco.
8. Further Observations on Laryngeal Tuberculosis.
H. Staats Moore, San Francisco.
9. A Case of Necrosis of the Hyoid Bone.
Adolph B. Baer, San Francisco.
10. Asthma in Its Relation to the Specialist.
H. B. Graham, San Francisco.
11. The Consideration of Nasal Conditions Causing Asthma.
W. H. Dudley, Los Angeles.
12. Meningitis in Its Relation to Otology and Ophthalmology.
W. P. Lucas, University of Calif.
13. Status Lymphaticus.
John Mackenzie Brown, Los Angeles.

Eye Papers.

Additional contributions may be sent to Dr. W. F. Blake, 240 Stockton St., San Francisco.

1. Cataract Complications.
Vard H. Hulén.
2. Some Problems in Refraction.
Percival Dolman.
3. Title to be Submitted.
H. Barkan.
4. Operations on Eye Muscles in Heterophorias.
E. W. Alexander.

Urological Section: Advance Program.

(Wednesday Afternoon.)

Early Hydronephrosis (illustrated with lantern slides).

Dr. G. T. Courtenay.

Results of Super-Pubic Prostatectomy for Hypertrophy of the Prostate.

Dr. M. Molony.

The Seminal Vesicles.

Dr. A. R. Rogers.

Other papers to be read at this session will be announced later.

Thursday Morning.

Functional Kidney Tests, their Diagnostic and Prognostic Value. Dr. W. B. Dakin. Discussion opened by Dr. W. B. Stevens.

Report of Supravescical Abscess with Cystoscopic Findings. Dr. Ralph Williams.

Hematogenous Kidney Infections and their Treatments. Dr. Granville MacGowan. Discussion opened by Dr. H. Moffitt, Dr. H. Ryfkogel, Dr. J. A. Lartigau, Dr. L. Porter.

Modern treatment of Gonorrhea and Its Complications. Dr. R. L. Rigdon. Discussion opened by Dr. V. G. Veckl, Dr. E. McConnell, Dr. G. G. Reinle.

Hematuria. Dr. Martin Krotoszyner. Discussion opened by Dr. H. Meyer, Dr. G. Evans, Dr. Dudley Fulton, Dr. A. Lobingier, Dr. T. C. McCleave.

Diagnosis and Treatment of Diseases of the Accessory Glands of the Urethra. Dr. A. B. Cecil. Discussion by Dr. J. C. Spencer, Dr. M. Silverberg.

REMARKS ON STONE IN THE BLADDER.*

By HENRY MEYER, M. D., San Francisco.

Although the complete removal of stone from the bladder at one sitting by crushing, followed by the immediate evacuation of the fragments, requires much greater skill than the removal of the same by opening the bladder, it is unquestionably the operation of choice. The only exceptions to this statement are the following: 1st, in cases where the calculus is lodged in a diverticulum; 2nd, in cases where the calculus is extremely large, although I have not yet seen a case where the calculus was so large that I could not remove every fragment at one sitting, and 3rd, in cases where the existence of the calculus is accompanied by retention of urine from a hypertrophied prostate or other obstruction, when the calculus should be removed with the prostate or such obstruction as exists in a given case. Cases of calculi attached to the wall of the bladder are quite common and are just as readily removed by litholapaxy as are those lying loose in the bladder.

It is very easy to detach a calculus from the wall of the bladder by striking it with the cystoscope or by grasping it with the cystoscopic lithotrite or ordinary lithotrite, and I wish to say that calculi may be found attached to almost any part of the bladder mucosa. I have seen several cases where they were attached to the anterior wall close to the neck, and others attached to the lateral walls and again others attached to the base. With the cystoscopic lithotrite small stones can easily be completely crushed under the guidance of the eye without the use of any form of anesthesia or with a local anesthetic in the posterior urethra.

To crush large bladder stones, the cystoscopic lithotrite is not a practical instrument, since fragments must be grasped and crushed and soon the field becomes cloudy, and while one can wash the bladder through the shaft of the instrument, it would be necessary to do this entirely too often to be practical; again when large calculi are crushed in the bladder, it is impossible to avoid the presence of some blood, yet the smallest amount of blood is sufficient to interfere with the cystoscopic feature of the operation; I am convinced from my experience that the cystoscopic lithotrite is only valuable for crushing small or medium sized stones unless the operation is to be done at several or many sittings.

I always give my patients urotropin in 7½-grain doses several days before the operation and continue its use for a week after.

The bladder should be thoroughly washed and distended with 150 to 200 cc. of clear sterile water or 4% boric acid solution, although I have often been compelled to crush calculi with very much less fluid in the bladder in cases where the bladder had become contracted and irritable, and in these cases even under profound narcosis the fluid would run out along the side of the instrument leaving very little in the bladder. In such

* Read before San Francisco County Medical Society, September 30, 1913.

cases one must work with great caution to avoid grasping the bladder walls; but even in these cases I have always managed to complete the operation without any bad results. If the calculus to be removed is large I prefer to give a spinal or general anesthetic, if small or medium sized I only use a 3% solution of alypin in the posterior urethra. If the patient is not very sensitive small calculi and occasionally large ones, particularly in the female, can be removed without any anesthetic whatever.

I hope it is unnecessary for me to say that all instruments should be sterilized. Every urologist has had patients who have been informed that they had stone in the bladder when none existed; the diagnosis having been made from the patients' symptoms; but every symptom that a patient can have with stone in the bladder could also exist from the presence of many forms of cystitis, some diseases of the kidney and some of the tumors in the bladder.

Again, occasionally stone in the bladder is not diagnosed by some who use the cystoscope, but more frequently stone in the bladder is diagnosed by some who use the cystoscope, when no stone is present. I do not believe there is any excuse for anybody to positively diagnose stone in the bladder when none exists. There are some rare instances where the X-ray will assist in the diagnosis when a calculus lies deep in a diverticulum and can not be seen or felt.

While most patients with stone in the bladder suffer from frequent urination and tenesmus there are certainly some whose symptoms are so slight that the presence of stone in the bladder would hardly be suspected, although the calculus may be large; this was the case in three of my patients, one of whom has a calculus one inch in diameter lying loose in the bladder, who has never had any pain or tenesmus although he urinates every two hours and has urinated about every two hours night and day for a period of twenty years and that is what brought him to me. On account of the fact that he does not suffer he refuses to have the calculus removed. I do not believe the calculus has produced the frequent urination because I doubt if it has been in his bladder twenty years. In my earlier experience I often failed to make a cystoscopic examination unless the symptoms seemed to be sufficient to warrant it, according to my own way of thinking, and I believe I must have overlooked the presence of stone in some cases as well as other pathological conditions.

Cystoscopy is the surest method by which one can make a correct diagnosis, but the stone searcher is a valuable adjunct.

Strange to say the nuclei of vesical calculi may consist of almost anything. In one of my cases, a woman, the nucleus of a large stone was some kind of wood, I believe an elmwood tent; in another, a male patient, the nucleus was chewing gum; both of these were removed with the Nitze cystoscopic lithotrite. It is immaterial what kind of lithotrite is used to crush bladder stones, but I would advise that the fenestra in the female blade be wide open, particularly when crushing large

stones. The Chismore evacuator is the simplest and best I have used.

As to recurrences, I will say that since it is a settled fact that a good technician can remove every fragment by litholapaxy, recurrences are no more common when done by a good technician than after cystotomy. Every urologist knows of cases of recurrences of stone after cystotomy as well as after litholapaxy due to faulty metabolism. I believe that the complete removal of stone from the bladder by litholapaxy at one sitting is the ideal operation, and patients are rarely incapacitated for more than 48 hours and often not incapacitated at all.

Discussion.

Dr. Martin Krotoszyner: I was surprised to hear that Dr. Meyer laid so much stress upon the value of the stone-searcher which since the advent of the cystoscope has been almost entirely discarded, and I would like to know in what instances of bladder-stone Dr. Meyer considers the searcher useful from a diagnostic or any other standpoint. Obviously, a man who is possessed of the natural mechanical ability like Dr. Meyer's will regard almost every case of bladder-stone curable by the cystoscopic or non-cystoscopic crushing method, while those of us, less skilful in that work, or the average surgeon, will find more cases suitable to the cutting operation. I myself possess at least one specimen of bladder-stone, which I showed in one of our previous section meetings, and which is of such huge dimensions that it could not have been removed by intravesical crushing even at Dr. Meyer's skilful hands.

Dr. W. P. Willard: I think there is one type of vesical calculus that should be eliminated from the crushing operations, and that is the case where you have a sacculated bladder which has become infected and irritable. I saw one of the most skilful operators in the country catch up a fold of the bladder in such a case, and in order to release his instrument it was necessary to do a suprapubic cystotomy.

I have seen two cases in the last month—one a man with intense cystitis and very irritable bladder. The cystoscopy was extremely difficult—the stone was larger than the largest of these shown by Dr. Meyer, and it would have been a very difficult procedure to crush this. We did a suprapubic cystotomy and the man was out in 10 days. We drained 3 days.

The other case was one of tabes, in which we did not operate. The man received an injection of cerebrospinal fluid after an injection of salvarsan, and was shortly afterward relieved of over-distension amounting to 30 oz, afterwards developing a pronounced cystitis. We cystoscoped him and saw a stone quite as large as the one demonstrated here. The bladder, from its over-distension, folded over the stone so that I think it would have been impossible to dig it out without grasping one of the folds of the bladder. The bladder could have been opened and immediately closed, and I think the man would have been up in five or six days. I think in these cases we should use some judgment in regard to crushing.

Dr. Meyer, closing discussion: Regarding Dr. Krotoszyner's remarks, I want to say that the doctor has deliberately distorted my statements and proceeded to discuss the same along the line of his own distortion. Dr. Krotoszyner stated that he could not understand why I said the stone-searcher was equal in value to the cystoscope in diagnosing stone in the bladder, when in reality no such statement was made by me, or would be made by anybody; in fact no statement was made

by me which could possibly have been construed to have such a meaning. Dr. Krotoszyner wishes to know in which cases the stone-searher is useful. In reply I will tell the gentleman that it is useful in some cases where a stone lies in a diverticulum, and also in some cases where mucus or pus has accumulated into masses lightly covered with urinary salts, resembling a calculus. The stone-searher readily disintegrates such accumulations and produces no sounds such as are obtained in cases of real calculus. Dr. Krotoszyner also stated that he did not believe that any patients could be well in forty-eight hours after litholapaxy. In reply I wish to say that if Dr. Krotoszyner did the operation of litholapaxy skilfully, he would not have made such a statement, as patients often walk away from the office after litholapaxy and remain well, when the work is done by a good technician. When I read my paper, I distinctly stated that in cases of very large calculus, supra-pubic cystotomy was indicated; but I had not met with a case as yet, where I did not remove every fragment at one sitting. In spite of this statement, Dr. Krotoszyner said he once showed a stone which he did not believe I could have crushed. Since I did not claim to be able to crush every calculus, regardless of its size, I believe Dr. Krotoszyner's statement was unnecessary and ridiculous.

SYSTOLIC APICAL MURMURS.*

By A. HENRY DUNN, M. D., San Diego.

I like to think of the heart as a central hollow muscular organ directly concerned with everything that reaches the circulation, and with the central nervous system. The fact that the heart is thus concerned with circulatory contents and the nervous system, and that the heart is an organ in which temporary changes soon result in permanent changes, makes the discussion of murmurs a complicated one.

MURMURS MAY BE

- A. Relative or Mural.
- B. Endocarditic.
- C. Chronic Sclerotic.
- D. Reflex.
- E. Murmur from rupture of valve segments. (Very rare.)

The neurotic probably belong to the mural variety.

We can not discuss murmurs without remembering dilatation and hypertrophy. Nor should we think of dilatation and hypertrophy without remembering that dilatation will bring out the murmur while hypertrophy will obliterate it. It is also important to recall that dilatation in a heart with normal muscular fibers is a different consideration from dilatation in a heart with diseased muscle fiber, as in fatty degeneration, etc. One is functional and the other is pathological.

By far the most frequent murmur that we meet in practice is a mural or muscular murmur, or what is most often called "a functional murmur." It is the murmur due to dilatation of the mitral ring to which the mitral valves are attached. The opinion that functional systolic murmurs, as well as any other murmur both endocardial and frictional, might be produced as a neurosis in a neurotic individual, is held by the best authorities. A murmur that was not preceded by overaction is the only murmur that I would call reflex.

That not only a systolic apical murmur, but all signs of failure of compensation may be a primary affection, is asserted by Hoover. Hoover states that from prolonged overaction for several days you might have increase in size, cyanosis, dyspnea, pulmonary edema, hepatic stasis, albuminurea and lung edema, all of which might suddenly disappear, showing that it is a primary affection and a muscular functional imposition.

Though not all tachycardia is followed by a murmur, all apical murmurs except reflex, and possibly some of those of fatty degeneration, are preceded by tachycardia. Therefore I can't help associating tachycardia and functional murmurs. I consider tachycardia as the first stage of most functional murmurs. Hence I always like to look for the cause of tachycardia. I never consider a disease which causes tachycardia cured until the pulse returns to the normal number of beats. Hence Graves disease should be treated as long as the pulse is faster than normal. In women Graves disease and floating kidney are very common causes of tachycardia. In men overexertion, constant muscular strain, excesses of stimulants and passions are frequent causes. The term "nervous individual" is often vaguely used when treatment of Graves disease, floating kidney, flat foot, athletic stunts or sexual and other excesses would soon remedy the tachycardia, and hence prevent the development of a functional murmur in some cases.

The high tension of civilization with lack of comparative shaping of our habits to fit same is responsible for many functional murmurs. I have been astonished at the great number of murmurs met with in the last few years since I examine patients' hearts after exerting them. (Making them hop, etc.).

As to so-called hemic murmurs being due to fluid veins: To my mind the term hemic murmur is often illogical. First, because I have examined the hearts of one thousand Indians over fifteen hundred times, made many Zohli hemoglobin tests and found no murmurs, though many cases of oligochromemia due to poor hygienic conditions. If these murmurs were due to fluid vein they would be more frequent and more constant in anemia; they are therefore, if found in anemia, due to myocardial and nervous elements. The Indians not being nervous, nor prone to overaction, rarely if ever have a murmur due to anemia. This supports the view that overcivilization associated with high tension is a better explanation than anemia in the greatest majority of cases. As a nation we suffer from chronic lack of inhibition, and eventually our cardiac nerves show it by overaction, and the myocardium by insufficiency.

We have all examined pernicious anemias a few days before death and they had no murmur. Even if patients who have murmurs have also oligochromemia, it is just as true that the latter might be due to the same cause as the murmur, as when occurring in overworked, poorly nourished individuals whose myocardium partakes of the general condition and becomes insufficient. My experience leads to the conclusion that very few murmurs are associated with anemia if rigid standard test be used.

* Read before the San Diego County Medical Society, September, 1913.

Like the Zahli test. In his postmortem findings, Cabot states that very few antemortem murmurs in markedly enlarged hearts prove to have been due to any anatomic changes in the valves.

It should be remembered that the old term "broken heart" does occur from disappointments as cited by Hoover; as the heart will have to pass through many stages before failure of compensation in what is called a broken heart, mental strain and worry should be sought for in tachycardia and functional murmurs. While hysteria and especially neurasthenia are less and less often blamed for many functional disturbances as our technic of examinations and laboratory methods become more developed, it should not be forgotten that it is important to recognize cardiac overaction from such causes dating back to youth, and elicit the history of the same in patients advanced in age. Those who early in life impose on their neurovascular system pay by disease of the myocardium and hypertension, probably due to histologic changes incurred in youth.

Careful research for a cause of cardiac overaction and murmurs will eliminate many mysterious murmurs and place them in among symptoms of Graves disease, floating kidney and other correctable causes. The physician who can not make such a search is not giving himself a square deal.

It is well to remember reflex murmurs. I found a murmur in a patient of acute parenchymatous nephritis whom I have examined many times in the last six months. The murmur was loud and transmitted to the axilla. It disappeared directly after vomiting. It was due to overeating after a period of food restriction; what I consider as important to distinguish this murmur from a purely mural murmur, is that it was not preceded by overaction or tachycardia.

The next frequent murmur is due to endocarditic degeneration. Chronic valvulitis is usually due to fibrosis of valves 50 per cent. of which is a sequence of acute rheumatism.

Robt. M. Wilson¹ proved with autopsies at the Philadelphia Hospital that many so-called tonsillar endocarditis were due to latent inherited syphilis and some occurred in families of tubercular history. It is a sclerotic murmur and Wilson rightly points out the hope of a more frequent diagnosis by the use of the Wassermann test. We have a similar case of a young girl at the San Diego County Hospital. Wilson found this condition of fibroscleroses associated with pipe-stem arteries in a child who had latent hereditary syphilis. Wilson I think rightly doubts the explaining away of regurgitation on the ground of endocarditis being a result of tonsillitis. This doubt was confirmed on repeated necropsy discerning fibroscleroses of the mitral valve. I feel as certain as Wilson that we are only too apt to accept the tonsillitis as explaining an endocardial murmur, especially since no definite history of endocarditis can be ascertained.

Let me cite a case of Wilson's description: M. S., age 10. Father died of pulmonary tuberculosis. Mother has chronic nephritis.

Personal history: Was born abnormal, was hard to induce breathing at birth. Cried the first three months of life, but mother does not recall if patient was blue. Very seldom had a sore throat and never

known to have had tonsillitis. Heart was always fast and forcible. Never noticed edema or ascites. Present attack for four months, dyspnea, cyanosis, arrhythmia and palpitation, slight edema of ankles and lids. Systolic murmur at apex, transmitted to axilla. Apex beat sixth interspace one-half inch to left of nipple line. Radial arteries easily palpable. Pulse 125.

Diagnosis: Mitral incompetency, probably from sclerosed mitral valves.

Patient died from an intercurrent disease after compensation was established. No Wassermann was taken. No necropsy.

Wilson also cites two cases of mitral involvement in sisters members of a family in which a large number of the recent ancestry had been tubercular. As the White Plague is so common, I should not wonder if many cases of mitral regurgitation might thus be satisfactorily explained by an inherited weakness in the valves which result in a sclerosis. Careful observation in this direction will prove of benefit. The latent syphilitic mitral valvulitis Wilson found in children associated with sclerosed vessels and accentuated second aortic sounds.

The rest of the chronic sclerotic valvular fibroses are due to the same causes as arteriosclerosis: chronic rheumatism, alcoholism, syphilis and old age. Some fibroses might have begun after an acute or chronic infectious disease circulating toxins in the blood.

It is asserted by good authority that men at sixty can have a systolic murmur as they can ordinarily arterial scleroses, and that most of them have systolic murmurs. My experience does not coincide with this authority.

DIFFERENTIATION OF MURMURS.

The most important means of diagnosing a cause of a murmur is repeated examinations in various postures at rest and on exertion. The next important point is a careful history.

One point to remember is that the pulse in the endocarditic group is sometimes irregular, as a rule, while in insufficiency it is regular. The curve will often have to be taken for this with a Mackenzie or other polygraph. The frequency is greater in functional murmurs than in organic. Where there is forcible displaced apex beat and increased area of dullness, greatly accentuated second pulmonic and rough systolic murmur, the diagnosis of valvulitis is not so difficult in children with thin walls. But in hypertrophied heart and myocarditis from any other cause, it is very difficult. To determine whether there is a lesion of the valve, repeated examinations and a careful history will often be the only means of diagnosis. In these conditions on repeated examinations it will be found frequently that the murmur is present on recumbency and absent on standing. Also in insufficiency on rest the murmur disappears entirely.

Digitalis accentuates a valvular murmur, while in insufficiency the murmur disappears under digitalis. But digitalis like any other drug should not be used except in extreme necessity, as will be discussed in treatment in another paper.

PROGNOSIS OF MURMURS.

This will depend upon the etiology. Many young men who were rejected many years ago by

insurance physicians are well and passed insurance physicians since.

On the other hand, a slow mitral incompetency combined with a moderate degree of narrowing may become progressive. Progressing to calcification and failure of compensation. Others with the same narrowing may live a long time.

Valvulitis in children under twelve is not for a bright outlook, especially if liable to rheumatism. As a rule the older the patient when endocarditis occurs the better the prognosis. In cases overstimulated by drugs and habituated to drug use, as a cripple to crutches, I have observed that the hope for benefit will depend upon the weaning and future abstinence from drugs.

I would consider every murmur as one not to be treated by drugs, until we ascertain its etiology. Most murmurs require no drugs; what is more, the patient can be greatly harmed by the injudicious use of drugs. The physician who plunges into his materia medica without carefully ascertaining the cause should quickly make room for a Christian Scientist, as such physician might be even vastly more injurious.

I confess having stopped digitalis in hearts that were made absolutely arrhythmic by its injudicious administration. Also strychnine, where the patient became almost distracted from palpitation. I am afraid digitalis is too often linked with heart disease and that stimulants are too often thought of when sedatives are indicated.

Happily for most of us, such remarks are not often indicated in our profession, and I accordingly offer my apologies to the great majority for even mentioning this irrationality.

1. In the Am. Journal of the Med. Sciences, July, 1913.

SOME SOURCES OF ERROR IN BLOOD PRESSURE MEASUREMENTS.*

By EUGENE S. KILGORE, M. D., San Francisco.
With the collaboration of W. H. STABLER.

Two years ago you appointed Dr. F. M. Pottenger, Dr. R. L. Wilbur, Dr. H. D. Power and Dr. G. F. Reinhardt a committee to investigate the effect of athletics on the health of the participants. This paper contains a partial report of some work which was undertaken as an introduction to this problem at the Students' Infirmary in Berkeley under the influence of Dr. Reinhardt, the member of your committee at the University of California. Since blood pressure measurements occupy a prominent place in such investigations, it seemed primarily desirable to know how much they can be depended upon; particularly in comparative studies, how closely the observations of one person will parallel those of another. For the present, attention is limited to some of the ordinary types of instrument in use among practitioners.

These employ a hollow rubber cuff supported outside by cloth or leather, which is fitted about the arm and inflated with air, the pressure being indicated by a gage or manometer. The position is that the air pressure is transmitted

through the soft parts to the walls of the brachial artery, and that when this pressure is raised above maximum or systolic arterial pressure the artery is completely collapsed; and that then, with slow escape of air and fall of cuff pressure to an amount just less than systolic pressure, the artery is forced open momentarily for the passage of the crest of the pulse wave. At that instant systolic pressure is to be read on the manometer. With further decrease in cuff pressure the portions of the pulse waves which force their way past the obstruction become larger; and, so long as the cuff is able to close the artery between beats, the up-fling and downfall of pulse waves under and below the cuff are quick and wide, usually increasingly so. But just when the cuff fails to do this, the flow becomes continuous, the artery is always filled, and consequently the fling of the beats is limited by the elasticity of the artery wall. The effort is made to read diastolic pressure when this change occurs from maximal to smaller pulsations.

For sources of error, therefore, the following points need to be considered: (1) Is the cuff pressure transmitted undiminished through the tissues of the arm? (2) How much resistance does the artery wall itself offer to compression? (3) The reliability of the various criteria used to determine when the first waves pass under the cuff. (4) The same for diastolic pressure. (5) The reliability of the manometers and pressure gages used.

(1) THE EFFECT OF THE TISSUES OF THE ARM.

That non-relaxation of the arm makes the readings too high has been shown by Hensen,⁸ who found differences in systolic pressure all the way from 5 to 80 mm. Hg in simultaneous readings from the two arms when the subject held a weight in one hand. The same writer observed a positive error also in the case of edema of the arm. In a patient with one arm normal and the other markedly edematous there was a difference in the pressure readings of 20 mm. Hg, whereas the two arms registered equally before and after the period of edema. Hensen used palpation to determine when the pulse waves returned, so that the errors associated with muscular rigidity and edema may have been due either to imperfect transmission of the cuff pressure to the artery or to increased difficulty in palpating the artery, or to both.

Hill and Flack⁹ have compared the pressure readings in arm and leg, putting one cuff around the arm and the other just below the knee and palpating at the wrist and foot. In healthy young individuals lying horizontally they find systolic pressure the same in arm and leg; and, when there is a difference of level between the two cuffs, i. e., when either the head-up or head-down position is assumed, the pressures differ by an amount substantially equivalent to that of a column of blood of the same height. This relation between limbs of different size they believe would not exist if the soft parts or the artery walls absorbed any appreciable amount of the pressure exerted by the cuff. Williamson²² in 35 cases rarely found this close correspondence between arm and leg pres-

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* Read before the Forty-third Annual Meeting of the Medical Society, State of California, Oakland, April, 1913.

sure readings, but Hill points out that he did not take the readings simultaneously, which is essential in a comparison of this kind, on account of the frequent changes in pressure from moment to moment.

Hill and Flack⁹ devised another ingenious experiment in support of the accuracy of blood pressure measurements by circular compression. After determining by the ordinary palpation method that the systolic pressure in a subject is, for example, 150 mm. Hg, they maintain this pressure in the cuff for a time and find that the arm does not swell, showing that the lumen of the artery is really obliterated. Then they drop the cuff pressure to 145 mm. and hold it there. The arm becomes very much congested, and they find that the pressure in its veins rises to exactly 145 mm.

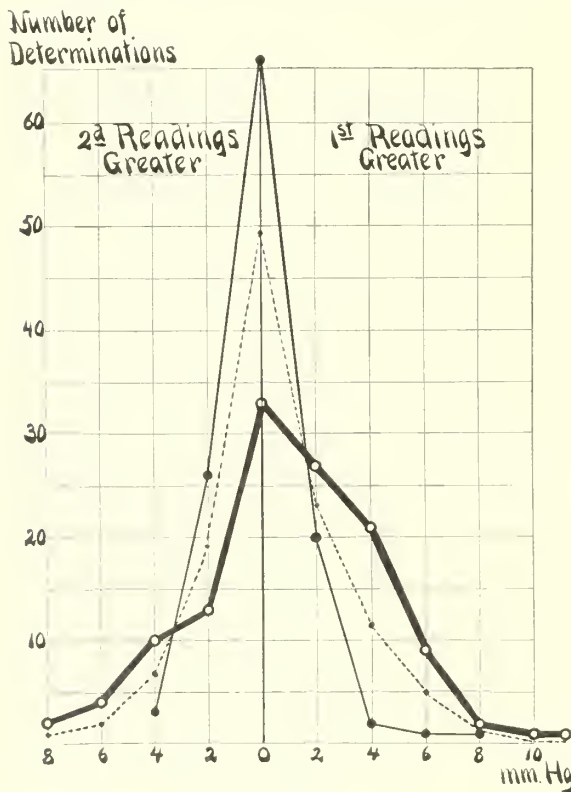


Figure 1.

Since this pressure is derived from the artery, arterial pressure must be at least 145 and not over 150. The point of possible weakness in this experiment would seem to be the measurement of the venous pressure. This was done by placing a second cuff a little below the first and raising the pressure in it to well above arterial pressure. One of the veins between the two cuffs being milked empty, the pressure in the lower cuff is gradually lowered. At the moment when the vein refills, venous pressure is read on the manometer attached to the lower cuff. This has to be done quickly, however, as the vein soon refills from its anastomotic connections.

Both of these experiments of Hill and Flack need further trial. In the few instances (14, 20) in which it has been possible to compare the circular compression and palpation method with di-

rect manometric observations in human beings, the former has appeared to give readings from 7 to 20 mm. Hg too high.

Stewart,¹⁸ using his calorimetric method, also shows that the cuff pressure which will just prevent pulse waves from passing is the same as the pressure necessary to stop the blood flow in the arm.

It has been repeatedly shown that if a narrow cuff is used, considerable pressure may be taken up in deforming the soft tissues or the artery wall. For example, Erlanger,⁴ in a series of comparative determinations with cuffs varying from 5 to 17 cm. in width, obtained readings 30 to 40 mm. higher with the narrowest than with the widest. The errors became progressively less the wider the cuff, but did not seem to be entirely eliminated even

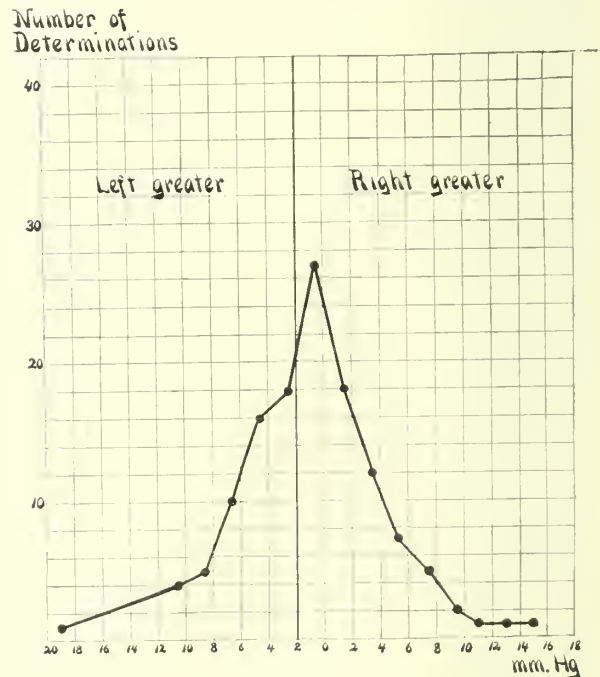


Figure 2.

with the 17-cm. cuff. The error from a 12-cm. cuff is probably small compared with other sources of error, and this width is generally accepted as standard. For the smaller arms of children a narrower cuff will give the same degree of accuracy^{7, 8, 15}. Failure to fit the cuff accurately will give rise to errors in a manner similar to that of a narrow cuff. Before inflation it should be snug and smooth but not tight.

The prevailing view is that in the absence of edema and muscular contraction, and with a sufficiently wide cuff, the size of the arm makes little or no difference in the reading; and this view is supported by the experiments of Hensen⁸ and Janeway,¹¹ who have each reported a case in which one arm was paralyzed and somewhat smaller than the other, and in which the blood pressure was read the same for the two arms. Low readings may be obtained in very stout subjects (Janeway). A little clothing on the arm creates no more error than the arm tissues themselves, provided it is not thick and stiff; and measurements made without

rolling up the shirt sleeve may be more accurate than those secured with a cold rubber surface placed directly on the skin of a sensitive patient.

(2) RESISTANCE OF THE ARTERY WALL TO COMPRESSION

All present methods of bloodless blood pressure measurements depend upon the assumption that the artery wall yields readily to compression, that the resistance is due to the pressure of the blood within. As a matter of fact, the artery wall itself may offer considerable resistance to compression. A thin-walled rubber tube of the diameter of the radial artery requires a pressure of 150 mm. Hg to completely close it;¹⁶ a boiled artery may resist a compressing force up to 164 mm. Hg; an ox carotid in rigor mortis 30 to 70 mm. Hg; and it is a common observation among surgeons that a little handling of arteries in the living causes them to stiffen remarkably.

Many clinicians think they can feel changes in the caliber of a patient's vessels from time to time;¹ and Hoover,¹⁰ by immersing one arm of a healthy man in ice water, found that the pressure reading in that arm could be raised 22 mm. Hg while the pressure in the other arm was not affected.

Russell¹⁶ insists that in disease, in response to toxins in the blood or other causes, arteries often assume a rigidity ("hypertonus") approaching post mortem rigor, and that the high pressures recorded are due to this more than to actual high blood pressure.

Careful experiments on the resistance of arterial walls to compression have been reported by Jane-way and Park.¹² They found that the application of vaso-constrictor agents may so stiffen an ox mesenteric artery that it requires an external pressure up to 51 mm. Hg to obliterate it. They also showed that arteries with extensive atheroma may offer but little resistance to compression, because the plaques are not continuous, and even though some parts of an artery are actually calcareous, other parts will easily collapse—another reason why a wide cuff should be used.

Against any very large error from this source are the previously mentioned experiments of Hill and Flack and the comparison with direct manometric determinations of Müller and Blauel,¹⁴ and of Volhard.²⁰ These observations, however, have not been sufficiently confirmed, and it would seem that much more experimental work must be done before we shall know what are the limits of error from this source. Until then we shall have to bear in mind the possibility that when we find high pressure readings, we may in reality be measuring not mainly high blood pressure but increased arterial resistance.

(3) CRITERIA FOR SYSTOLIC PRESSURE.

For some reason, not yet satisfactorily explained, systolic readings taken while slowly inflating the cuff are usually a little higher than those obtained with falling pressure.⁴ We shall consider only the reappearance of the pulse waves after obliteration,

which is the common usage. Three criteria are in general use: the oscillatory, the auscultatory, and the method by palpation.

(a) Oscillatory method (von Recklinghausen). When the cuff pressure is above maximum arterial pressure the impact of the pulse waves at the top of the cuff produces small oscillations in its pressure. These may be observed as excursions of the mercury in a manometer or the pointer of a spring instrument, or special contrivances to show these oscillations, such as a writer on a smoked surface, a drop of liquid or a pith-ball in a glass tube, etc. When the cuff pressure falls just low enough to allow blood to pass under it, the impact of the pulse waves is felt not only at the upper margin of the cuff, but through its length, and the amplitude of its pressure oscillations is more or less suddenly increased. Systolic pressure is read at the instant when this sudden increase in amplitude occurs.

In Erlanger's⁴ painstaking experiments with an artificial scheme and with dogs, this criterion gave results closely corresponding with direct manometric readings from the vessels. When there is a sudden and decisive change from small oscillations to large ones, this method is perhaps freest from subjective errors and the truest index we have of the time when pulse waves begin to pass under the cuff. But in many cases the transition is not sharply defined, even with instruments designed to minimize inertia errors (a mercury column is too heavy to be at all reliable for this purpose); or there may be more than one point where the oscillations abruptly widen. The designers of instruments intended to use this principle admit the presence of this difficulty in certain cases, and I have found a disappointingly large number of cases in this group.

With graphic instruments the doubt as to where the sudden increase in amplitude occurs may be removed by recording a series of oscillations with the air outlet closed after each decrement of 5 or 10 mm. Hg in cuff pressure.⁴ This, however, is time consuming, and we are not yet sufficiently informed in regard to the effect of protracted cuff pressure on the blood pressure determinations.

Another indication of systolic pressure is the appearance of a little shoulder on the downstroke of the pointer or writing lever, which is due to the slight delay in emptying the portion of artery under the cuff when waves begin to go through it.⁴ This observation may be useful in cases where there is no sudden increase in amplitude of oscillation, but, unfortunately curves are not infrequently encountered in which the point of abrupt widening of the oscillations and the appearance of the shoulder do not coincide.

(b) The auscultatory method, first described by Korotkow in 1905, depends upon the stethoscopic detection of sounds over the artery below the cuff when waves begin to pass through. If congestion of the arm is avoided and the stethoscope is placed lightly over the artery 4 or 5 cm. below the cuff, the readings obtained are definite and are said to agree well with those of the oscillatory method.

The technic does not require much practice nor any particular kind of stethoscope; a bell 2 or 3 cm. in diameter is convenient. And it would seem that in the case of a physician who already owns a stethoscope, the only result he could expect from the purchase of a special contrivance widely advertised for this purpose would be to add weight to his outfit and increase the revenues of the manufacturers.

(c) The palpation method. The most commonly used and the most convenient method for detecting the reappearance of the pulse waves is by palpation of the radial artery. The distance of the wrist from the cuff and the frequent presence of considerable tissue about the artery make it impossible as a rule to feel the first waves which pass the obstruction; consequently, readings by this method are usually somewhat lower than those obtained by the other two methods, often 5 to 15 mm. Hg.²² Experiments by the writer and an assistant, which will be described presently, agree with these observations. But if, as now seems probable, some of the cuff pressure is taken up in compressing the artery wall, these lower

very first wave felt may be accepted as the reading point.

The objection frequently brought against it is that the sense of touch is less accurate than hearing and sight, so that the results of this method contain more subjective error. Mr. W. H. Stabler and I have attempted to measure this error for ourselves. He is a student who has assisted in this work for a number of months, and we ventured to consider ourselves possessed of average tactile and visual acuity. Five hundred and sixteen determinations were made upon 46 subjects, all healthy young men who were being examined medically for entrance to college. We rejected any who seemed slightly chilly or excited or otherwise unsuitable. With the subject lying flat on his back on a narrow table and with arms relaxed at his sides, a 12 cm. cuff was carefully fitted to each arm and both attached to the same mercury U-tube manometer, which was overhung so as to be equally readable from both sides of the table. Both cuffs were inflated at once by turning on the compressed air which is available in the Infirmary and which proved a great saver of labor and time; then

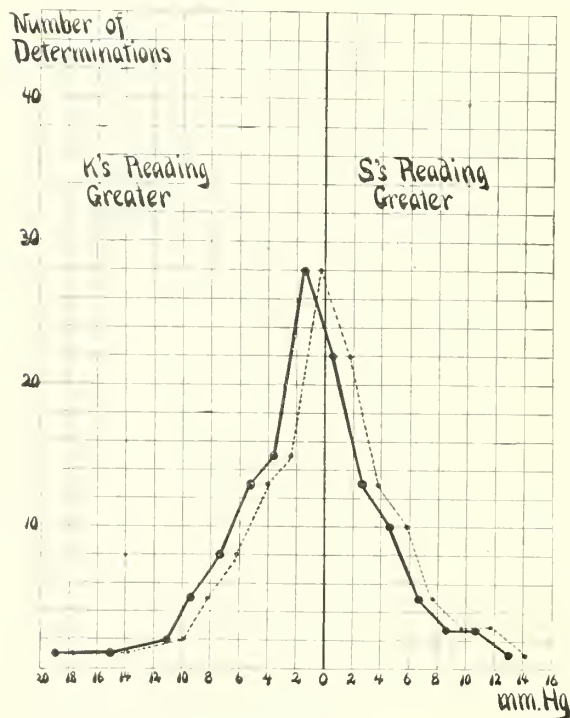


Figure 3.

figures are really more nearly true. And it should be remembered that in the few recorded cases which were controlled by direct manometric observations,^{14, 20} palpation gave results several millimeters too high. Moreover, anything that stiffens the artery and increases its resistance to compression should also delay the detection of returning waves by the finger, and thus automatically tend to neutralize the error due to hypertonicity, though the amount of error and of the correction would be unknown. Another advantage which the palpation method enjoys in common with the auscultation method for systolic pressure is that there is no doubt about where to make the readings, as the

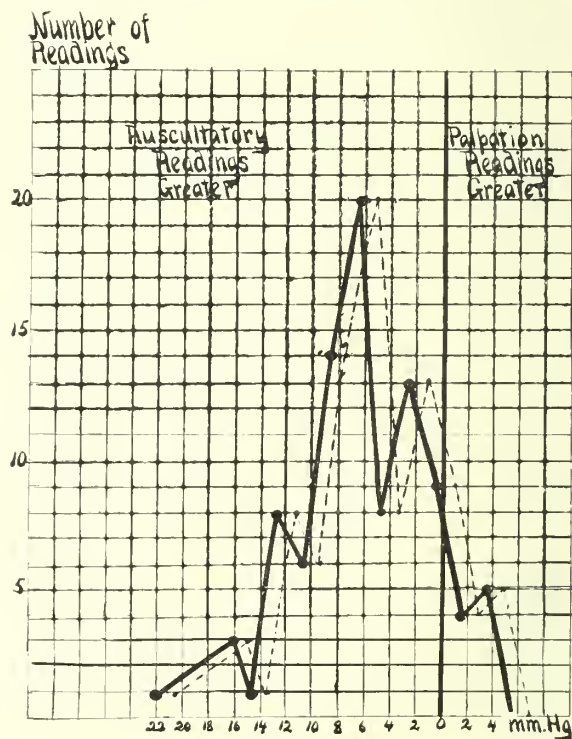


Figure 4.

slowly both arms were equally and simultaneously decompressed by escape of air through the Erlanger stop-cock, while one of us palpated the right radial and the other the left, each recording his readings independently. Comparative readings of this kind would be worthless unless these precautions were taken to eliminate the effect of respiratory or other variations of pressure. After two such readings we changed sides and repeated.

On bringing together the results it was found that the average of K's readings was 124.43 mm. Hg, of S's 123.15, a difference of 1.28.

In comparing the first and the second reading

(on the same side) we expected that the second readings would average higher, because after finding about the level of pressure in one trial one might concentrate his attention on this region of the manometer and detect a still smaller wave next time. But S's second readings averaged exactly the same as the first, and the average increase in K's second reading was only 0.065 mm. Hg. In individual instances, as might be expected from causes other than observation errors, there were considerable differences between first and second readings; and the amounts of these differences and their relative frequency of occurrence are shown in figure 1. The light line gives S's results, the heavy line K's, and the dotted line the average.

The average of all the left arm readings was 0.076 mm. Hg greater than for the right, a negligible figure. The even distribution of the higher readings for right and left sides is shown in figure 2.

For showing the discrepancies between the simultaneous readings we have compared the readings of S with those of K (using the average of two readings in each case), and the results are shown in the solid line of figure 3. The dotted line shows the results after correction for the average amount (1.28 mm. Hg) by which K's readings exceeded S's. With this correction, which, however, makes little difference in the results, the discrepancy was within 3 mm. in 55% of the determinations, within 5 mm. in 80%, and was more than 10 mm. in 1 2/3%.

In cases where there were wide differences we changed sides and made new observations repeatedly, also readjusted or exchanged the cuffs; and the later readings in these cases were usually closer together. (In summing up, we included all the results, good and bad). In no case, however, could we satisfy ourselves that the discrepancies were due to faulty fitting of the cuffs or that the higher readings were constantly to be found on one side.

These figures give no indication of our absolute errors, but only our disagreements. They are not even necessarily a measure of our inaccuracies in palpating the artery and reading the manometer; for it is possible that differences occur in the tonicity of the arteries in the two arms, perhaps as a result of the novel sensations connected with applying and inflating the cuffs. It has been shown that cold applied to one arm may have this effect.¹⁰

The results *do* indicate how much *variable* error is likely to occur in measurements of systolic blood pressure of healthy young subjects by one of us using the palpatory method. For example, if one of us made a series of such observations where comparative results were desired rather than absolute values, experimental error should be expected equal to that shown by figure 3. The variable error might be less if the observations were all on one individual or on subjects well accustomed to having the cuffs applied; and it might be greater if more observers contributed to the series.

The palpation method was compared with the

auscultatory for systolic determinations 92 times, using 46 subjects, the same subjects being used and the same arrangement of cuffs and manometer for securing simultaneous readings as described above. One of us (K) placed a 4 cm. diaphragm stethoscope 2 to 5 cm. below the cuff on one arm and recorded his manometer reading when the first sound was heard with falling cuff pressure; while the other (S) palpated the opposite radial artery for the first perceptible pulse wave, and recorded his reading independently. We then changed sides and repeated.

The results are shown in figure 4. The dotted line was made by raising all of S's palpation readings 1.28 mm. Hg, this being the amount by which his palpation determinations had been found to average below K's. Without this slight change, which makes little difference in the results, the average of all the palpation readings is 120.25 mm. Hg, that of the auscultation readings 125.63, a difference of 5.38. In 4.3% of the determinations auscultation gave results higher by more than 15 mm. Hg; in 16.3% by 10 to 14 mm.; in 37% by 5 to 9 mm.; in 32.6% by 0 to 4 mm.; and in 9.8% of the instances the palpation reading was greater by 1 to 5 mm. Hg.

(4) CRITERIA FOR DIASTOLIC PRESSURE.

(a) Oscillatory method. The majority of investigators are agreed that with gradually falling cuff pressure the last of the maximal pressure oscillations in the cuff occur when diastolic or minimal pressure is reached.^{4, 15} A graphic apparatus such as Erlanger's is best for determining this point; but even among those curves there is not infrequently one where opinions may differ as to the reading point to accept. Instruments with a pointer and dial present still more difficulty, because one has only a mental record of the extent of the foregoing oscillations, while mercury instruments add to these difficulties the large errors due to inertia.

(b) The auscultatory method. In the region of diastolic pressure the sound accompanying each pulse wave in the artery just below the cuff usually becomes loud and sharp, then suddenly changes to a low dull tone, and with a little further reduction of pressure, disappears. Comparisons with the oscillatory method³ and with direct manometric measurements²¹ have favored the change in sound as the criterion for diastolic pressure, but opinion is not yet settled, some maintaining that the disappearance of all sounds is a better indication^{2, 5, 6}. The change in sound is usually sharp-cut, and if followed, should give good comparative results, though cases are not infrequent in which the change is absolutely gradual.

(c) The palpatory method. Strasburger¹⁹ and Ehret advocate determining diastolic pressure at the point where, with diminishing cuff pressure, the pulse below the cuff becomes largest and most collapsing. In this procedure there is the greatest opportunity for subjective error.

(5) MANOMETERS AND PRESSURE GAGES.

Mercury manometers are the most reliable. With glass tubing of at least 2 mm. inside diameter

and with reasonable care to have mercury clean the tube vertical, the zero of the scale properly placed, etc., one can be perfectly sure he is measuring the air pressure in the cuff correctly. With a U-tube the scale is half as long as with a reservoir and single straight tube, but the extra error in reading on the short divisions is slight in comparison with others. Mercury has far too much inertia to respond quickly to changes in amplitude of pressure oscillations, and should never be relied upon for showing oscillatory criteria.

The other common type on the market consists of a pointer which is moved by the expansion of a hollow spring or aneroid chamber. Some of these instruments are extremely light and portable, and they always enable the user to observe the oscillatory phenomena. Some of them are very well made and have been found to give true readings after years of use and in spite of changes in temperature.

On the other hand, some instruments of the best make have been found after a little use to give very erroneous readings. I know a patient whose doctor put one of these spring instruments on him and measured his blood pressure at 170. The patient, who was a very intelligent gentleman, refused to put his faith in a spring and went at once to another doctor who had a mercury machine and who found the pressure to be 140. These small instruments may be used on account of their great convenience, but if one wishes to be sure of his results, he must check them up from time to time against a mercury instrument.

Space is not sufficient to mention many other conditions which may modify blood pressure measurements, such as position of the body, recent exercise, excitement, meals, etc.

In conclusion it should be said that the numerous sources of error pointed out should not in any way discourage the use of blood pressure instruments. Careful technic will reduce or eliminate some of the errors. Even if it turns out that we are often really measuring arterial hypertonicity, the clinical data on the subject retains its diagnostic and prognostic significance. A 12 cm. cuff should be used, and a manometer that one is sure of. For systolic readings the methods of palpation and auscultation are probably most reliable for general clinical use (remembering that the latter gives readings a few millimeters higher than the former); for diastolic determinations, the auscultatory method. Probably all these readings give values somewhat above true arterial pressure.

SUMMARY.

The soft tissues of the arm give rise to little if any error in blood pressure measurements. The resistance of hypertonic arterial walls has a greater influence, and perhaps at times produces large errors; although calcareous arteries may not give rise to an appreciable error. A cuff at least 12 cm. wide should be used. Palpation and auscultation systolic readings have simplicity and definiteness to recommend them.

Experiments are reported which show the amount of variable error in palpation systolic read-

ings for two observers. Similar experiments to show relation between palpation readings and auscultation readings for systolic pressure.

For diastolic pressure determinations the auscultatory method has the advantages of ease and definiteness of reading. Types of manometers are considered. Mercury instruments should not be used for oscillatory readings.

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A CASE OF HEMOGLOBINURIC FEVER.

DR. HARRY B. REYNOLDS, Palo Alto.

Hemoglobinuric or "Blackwater Fever" occurs in the United States almost exclusively in the Southern States from Texas east, being most frequent in the lower Mississippi Valley.

Its occurrence in California is such a rarity as to warrant the report of the following case which was seen by the writer in association with Dr. J. E. Chapin of Redwood City:

Tony D., aged 24, married, has one healthy child and is a bartender by occupation. Does not know of having had any of the childhood diseases. Denies syphilis. Does not know of having had malaria. Is a very moderate drinker. Has lived for many years around New Orleans. Was in California several years ago. The past four years has been in New Orleans.

The patient had been in California only one week prior to the onset of the present attack, coming here direct from New Orleans. Five days before leaving that city he left his work because of malaise, fever, chilliness and aching of the limbs. Took home remedies for twenty-four hours. Then consulted a physician who gave him some capsules. He took only one or two of these and then took a large drink of whisky after which he felt better. He does not think he took quinine unless the small capsules given by the physician contained some. In that case it could not have been more than six grains in all.

The next day he returned to work. Three days later he left for California, was en route four days, and seven days thereafter was taken in the following way:

During the afternoon of Saturday he had some fever and malaise and at ten p. m. had a violent chill. The chill was repeated twice during the

next twelve hours without periodicity. He was seen by Dr. Chapin on Sunday night after a fourth chill and was found to have a temperature of 104° .

Monday morning he was severely prostrated and his face had taken on a marked pallor. He had vomited incessantly during the night being unable to retain even water or ice or champagne. The vomiting was severe with much retching and the vomitus was clear water or bile-stained fluid. The urine was dark red.

On this day I saw the patient in consultation. He was very pale with a greenish yellow color under the pallor. The temperature was 102° and the pulse 110. Heart, lungs, abdomen, negative. Spleen could not be felt and did not percuss large. Reflexes unchanged. No enlarged glands.

Urine, about 8 oz. passed every four hours, was of port wine appearance, transparent and contained no sediment. On boiling a specimen it boiled solid in the test tube. Hemoglobin 70%. Red blood cells 4,200,000.

Patient was taken to hospital. Bimuriate of quinine was given hypodermically with nutritive and stimulating regime and absolute rest.

During the next day improvement was noted. The fever came down to 99° with pulse of 100. Urine became clear with no albumin or blood pigment. Vomiting ceased and patient rested easily.

On the next day, however, a chill reappeared, the temperature rose, the patient became more prostrated and was delirious. Vomiting was severe and incessant. Hemoglobin again appeared in the urine and the blood rapidly paled. In twenty-four hours the hemoglobin record dropped to 30% and the red cells to less than 2,000,000.

There was no response to stimulants and the patient died five days after the onset of the attack.

A blood culture kindly taken by Mr. Arthur Meinhard showed no growth. The blood smears examined minutely showed no plasmodia.

Samples of urine were submitted to Prof. Robt. E. Swain of Stanford University who very kindly examined them and reported as follows.

Two samples were submitted neither of which contained maximum amounts of hemoglobin. One was almost clear, being taken just prior to the recrudescence of the hemoglobinuria.

"Stanford University, Calif.,

"October 18th, 1913.

"The analysis of urine submitted yielded the following data:

Substance	Sample No. 4.		Sample No. 6.	
	Gms. per liter	% of total N.	Gms. per liter	% of total N.
Total nitrogen.	17.73	.....	8.555	.....
Urea	13.60	78.50	7.09	80.80
Creatinine	0.489	2.82	0.269	3.15
Ammonia	1.785	10.30	1.086	12.70
Creatine	Lost	.....	0.069	0.81
Uric Acid .....	.....	1.95	.....	2.12
Albumin .....	.....	1.10	.....	0.10
Specific Gravity	1.0275		1.0107	

"Number 4 carried hyaline casts, cystine and phosphates in the sediment. In solution were notable amounts of methaemoglobin, and haemo-

globin. A bare trace of blood coloring matter was present in No. 6.

"Since neither sample represented the entire collection of a 24-hour period, the results cannot be expressed on that very desirable basis, and the data on grams per liter are of little importance owing to the wide possible normal fluctuations in volume and specific gravity, and consequently in the weight of any given constituent per liter. Accordingly, of the quantitative data only those in terms of per cent. of total nitrogen are of real service. Here we find ammonia, uric acid, and creatine running abnormally high. For ammonia the figures are twice what may be regarded as a high normal amount. Uric acid, usually 1% or less, is high at 2.12%. Creatine is not a normal constituent of human urine, unless ingested preformed in meats, meat soups, or meat extract. If the patient was given extract of meat in any quantity, it could easily account for the creatine found. Otherwise, it indicates an abnormal breaking down of muscle tissue. The large amount of albumin in No. 4, and the smaller amount in No. 6, are plainly pathological, accompanied as they are by casts.

"(Signed) ROBERT E. SWAIN."

MADLUNG'S DEFORMITY.*

By HOWARD F. ADLER, M. D., San Francisco.

The condition known as Madlung's Deformity or manus valga, as he chose to call it, is not only an extremely rare condition, but is also of interest because so few know that the same conditions which give rise to pes valgus or club foot, may cause an analogous deformity to the wrists.

Our first records to anything of the sort date back to 1825, when Begin first noted among adult male workers in the cloth factories of France, and especially those engaged in continuous heavy work with press levers, that there occurred quite often a painless, forward dislocation of the wrists. Nine years later rather indefinite reference was again made to this condition by the French surgeon Dupuytren, to whom this discovery has wrongly been attributed by some, since we now know that in all probability all these cases were a form of professional deformity. From 1834 to 1878 there are about seven records of similar wrist subluxations, but, for various reasons, we cannot class them as typical Madlung deformities.

In 1879, before the Deutsche Gesellschaft für Chirurgie, Madlung first presented a clear picture of this unusual condition. He described an anatomical dissection on a twenty-two-year-old woman, which he had found at autopsy, and which had existed since childhood. Its chief points of interest were as follows: Forward subluxation of the wrists produced by an inclination of the articular surface of the radius toward the palm, caused in turn, by a forward bowing of the long axis of the radius at its epiphysis; prominence of the dorsal edge of the bone, and atrophy of the palmar aspect, and finally prominence of the lower end of the ulna dorsally. He gives a detailed description of five

* Read before the San Francisco County Medical Society, January 20, 1914.

such cases, and states that he has seen twelve altogether. Stetten summarizes Madelung's paper in the following way: The condition is due to a disturbance of the growth of the joints, and has its analogy in pes valgus, genu valgum, and scoliosis; that it develops spontaneously never before thirteen, and rarely after twenty-three, usually with pain, and limitation of extension of the hand. It is usually bilateral, twice as frequent in females as in males, occurs usually in the working classes, and reaches its height in from one to two years. The main factor in its formation is the more powerful action of the flexors of the forearm over the extensors. Continuous hyperflexion, stretching the extensor tendons and posterior ligaments over the dorsum of the radial epiphysis exerts a forward force, and bowing toward the palm. Pressure of the carpus on the anterior edge of the lower ex-



tremity of the radius produces atrophy, while the release of pressure from the posterior edge allows a hypertrophic growth. The disease is one of the growth period, and is due to a primary weakness

of the bone, or perhaps to a disturbance of nutrition. Treatment should be palliative by means of a leather wrist hand. He suggests for the deformity, the name of manus valga.

In the discussion, Czerny, Hirschberg, and Von Langenbeck took part, and all claimed to have seen similar cases. Since 1879 numerous cases have been reported. Duplay in 1885 cited a case in which he performed linear osteotomy of the radius with great success, and notes that the condition resembled very much the genu valgum of adolescence, described in 1879 by Mikulitz. In 1888 Von Bergman placed a typical case on record, and in 1891 Hoffa described an orthopedic apparatus which he constructed for a case. A little later the Roentgen rays were employed to throw additional light upon the subject. In 1901 Kirrison published a case of the reverse type, with a backward subluxation of the wrist, and Stetten in 1909 published a second case with a most scholarly résumé of the entire subject, which contains sixty-four case reports, of which two were of the reverse type. I have been able to find five more since then, making a total of sixty-nine in all.

The case I wish to present this evening, came to the Stanford Medical Out Patient Department, on December 10, 1913. She complained of shortness of breath, dizziness, nervousness, and difficulty in walking, all of which was subsequently explained on the grounds that she was suffering from aortic and mitral regurgitation, diabetes mellitus, chronic interstitial nephritis and arthritis deformans. The patient herself had paid but little attention to her wrists. So far as she knew they had always been deformed, and as they had never troubled her, she objected to the attention which was called to them. She denied ever having done especially hard work, and physical examination showed no traces of rickets. Inspection of the wrists shows a marked prominence of the radius and ulna dorsally, especially the latter. On the palmar surface the carpus is very prominent, and the wrists appear very thick. There is no pain attendant to mobility, and the latter is not restricted to any degree, except slightly on extension of the hands. The bowing of the radius is not well marked as it is in many cases of this deformity. At a glance, it reminds us of a reversed collis fracture.

The pathology of a typical case may be briefly described as follows: A deviation of the inferior articular surface of the radius toward the palm in the anterior group of cases, and toward the dorsum in the posterior group. In forty-seven of Stetson's sixty-four cases, bowing of the radius was found, with an exaggeration of the normal curvature of the bone towards the ulna. As a direct result of this, the joint surface of the radius is turned toward the ulna, and there is also some shortening of the radius. Exostoses near the epiphysis are frequently seen. The ulna may also be slightly bowed, but usually plays a passive part. Due to the displacement of the articular surface of the radius, the carpus is forced forward and toward the ulna, the small bones of the wrists naturally having to adjust themselves accordingly. The proximal row of carpals usually show a wedge

formation, instead of its normal arch, and the rest fit in as best they can.

The deformity is bilateral twice as frequently as unilateral, and seven times as frequent among females as in males. It begins usually between the ages of eight to eighteen, occupation playing a small part in its production. The general condition of the patient does not seem to be responsible for this deformity, although in one-third the cases, heredity seems to play a predisposing part. According to Stetten, an irregular ossification seems to be responsible rather than late rickets, to which it has been attributed by other writers. The forward or backward subluxation according to the former, is due to the fact that the bones follow the line of least resistance, while others claim that the pull of the flexor or extensor tendons is the causative factor. Since 1909, Homuth and others have suggested that a disturbance of the internal secretions especially before puberty, may act as an underlying cause for a local osteomalacia, with the thymus gland as a possible seat of the trouble. The deformity develops spontaneously, reaching its height in from two to three years, with a slight pain, fatigue, weakness and limitation of motion. Treatment by linear or cuneiform osteotomy is usually successful and makes the prognosis a good one. This should not be attempted until after the deformity has reached its height.

The differential diagnosis of Madelung's deformity must be made from congenital, traumatic, professional, hysterical and post-inflammatory deformities of the wrists, rickets, epiphyseal, radial, and carpal fractures, exostoses, and spinal arthropathies from tabes and syringomyelia.

My thanks are due to Dr. Wilbur for his permission to present this case, and to Dr. Boardman for the plates. (I also wish to acknowledge my indebtedness to Dr. DeWitt Stetten, from whose article in the *Journal of Surgery Gynecology and Obstetrics*, January, 1909, most of the material for this paper has been obtained.)

CLOSURE OF THE ABDOMEN IN THE FACE OF SEPSIS. REPORT OF ONE HUNDRED CONSECUTIVE CASES.*

By J. D. DAMERON, M. D., Stockton.

Years of efforts at drainage and repeated attempts to follow methods advocated by authors and surgeons of large clinics, have led me to the same unsatisfactory end results. Consequently, over three years ago I arbitrarily abandoned all abdominal drainage and have since completely closed all abdomens, regardless of operative findings. After having operated on over one hundred cases with free pus in the abdomen, I find nothing to make me at all consider returning to drainage. The following questions have constantly recurred:

First: May it not be that the constant draining of the serous exudate is robbing the peritoneum of one of its protectors?

Second: No matter how careful we may be, does not the constant dressing over the open peritoneum lead to secondary infection or constant reinfection?

In the experience of the last three years, cases of practically every type have been included. Operations for perforated gastric ulcers, perforated typhoid ulcers, exploded appendices, pelvic and general peritonitis, have all been followed by closure of the abdomen, irrespective of the amount of free pus, with practically the same end results, namely, very moderate gas pains, quick and easy convalescence and apparently no post-operative complications. I have gone even further and have performed an ileocecostomy in the face of peritonitis with perfect results. It is now clearly proven to myself at least, that closure of the abdomen is the procedure to be followed in all cases, but the surgeon must seek and remove the exciting cause.

Not only has the immediate post-operative experience been more pleasant, but the final results, though as yet a little early to judge, in some of the cases, it seems to show much encouragement. No symptoms of adhesions, no secondary operations have as yet been needed. Again, in these one hundred cases I have had but one fecal fistula, and that in a case which, at the solicitation of the doubting physician for whom I operated, I made a stab wound into the peritoneum, with the result that no pus was found, but adhesions and a fecal fistula followed.

In many of the cases I have had union by primary intention. In all the peritoneum has united and held, but in some the superficial fascia has become the seat of a suppurative condition, which requires sensible, steadfast treatment to prevent a phlegmonous advance.

Taken on the whole, the wounds have been no harder to control than in the former days of drainage, and all that now lacks perfection is the prevention of the wound infection; in all cases where cultures have been taken they have proven to be *B. Coli*. I have had rather extensive fascia destruction, but not any more than in a drained wound, for this infection of the abdominal wall is due to contamination from free pus present in the abdomen at the time of operation. No hernias have been reported.

During these three years I have drained three cases, as comparative demonstration at the request of physicians, and have found the same former results, much and long continued pus drainage, gas distention and gas pains, and in one case death.

Along with the successes I must report one failure, that of a Mrs. B—, who though no pus or area of inflammation could be demonstrated on the table, the patient died on the sixth day after the operation from fulminating peritonitis.

THE CHARTS OF MY HOSPITAL OF THE LAST FIFTY CASES SHOW THE FOLLOWING:

Average number of days following operation before temperature touched normal, five and one-half.

Average number of days following operation before temperature remained normal, eight and one-half.

Average number of days following operation before patient discharged, nineteen and one-half.

CASE HISTORIES.

Case number 319: Miss F, age twenty years.

* Read before the San Joaquin Valley Medical Society, 1913.

Temperature, one hundred and three and six-tenths. Pulse, one hundred and thirty-six. Vomited a greenish fluid. Abdomen distended and tender to touch. She gave a typical history of a ruptured appendix. At operation large quantity of free pus in abdomen and necrotic appendix was found. Appendix removed, abdomen sponged out and complete closure of same. Infection of wound followed and on the sixth day the sutches were removed. On the tenth day, at the earnest solicitation of her physician, I reopened the abdomen and put in a drain. No pus was found in the abdominal cavity, peritoneum and intestines not inflamed, but a fecal fistula developed. Her temperature was never normal until the thirteenth day after the operation. She left the hospital on the eighth of November, 1912, thirty-five days after the operation, with a small fecal discharge of pus, periodical rises of temperature, and never fully recovered for twenty days thereafter. I firmly believe had we not interfered with the original wound, her recovery would have been shorter, safer and without any fecal fistula.

Case number 591: Mr. L., single, age twenty-six years, family and past histories negative. Present history: Patient brought to hospital after several days' observation. Entered March 15, 1913. Temperature, one hundred and one and six-tenths. Pulse, one hundred. Respiration, twenty. Operated on March 16, 1913, a. m., and one-half ounce of free pus found in abdomen. Appendix removed and abdomen closed. Temperature touched normal on the third day and remained normal from the seventh day on. On the sixth day some induration around wound and temperature of one hundred and one, two stitches removed and about a dram of bloody pus removed. On the seventh day remaining stitches removed, but wound not opened. Slight drainage necessitated daily discharge for ten days. Twenty days following operation, patient discharged and took train home, fifty miles distance. Wound healed.

Case number 705: Mrs. J., age twenty-nine years. Family negative. Past history up until marriage at the age of sixteen uneventful. In the following two years after marriage, patient aborted six times (denying any interference), ranging from two to six months' duration. Then three healthy children were born. One year previous patient had aborted a six-months' fetus. Patient six months pregnant; on April 28th was suddenly seized with cramps and diffuse abdominal pains, then pain localized in right side over McBurney. Temperature said to have been normal. At this stage I was called in consultation. Temperature, one hundred and three and six-tenths rectal. Pulse, one hundred and eight. Respiration, twenty-eight. She was moved to hospital. Abdomen opened. Quantity of free pus in abdomen. Appendix necrotic, removed and abdominal cavity sponged and closed. Temperature never rose above one hundred and one. Touched normal on the fifth day and remained normal from seventh day on. Fifth day two stitches removed and two drams of foul-smelling pus evacuated (culture B. Coli.), discharge ceased. Tenth day after operation wound ceased to drain. Twelfth day after operation uterine contractions set in, patient aborted a six-months' fetus twelve hours after pains began. No complications followed. Discharged twenty days after operation. Skin and deeper structures intact.

TECHNIC

An incision three inches above the pubes is made through the right rectus muscle, down to the peritoneum. At this step I have wiped the edges with Harrington iodine and formaline in the hope to prevent infection, but as yet nothing has proven a success.

I then open the peritoneum and if there be free pus, I use hot gauze sponges, wrung from a salt solution, just as hot as they can possibly be borne by a gloved hand, and I never use anything but hot sponges, as they seem to stimulate the bowel and promote the ready removal of the pus and exudate.

I then start in search of a clear field if possible and begin to wall off the healthy from the infected. This is done by long packs of gauze sponges, six inches wide by three feet long.

I now start my search for the exciting cause and continue same until found and removed, taking with it every suspicious looking material.

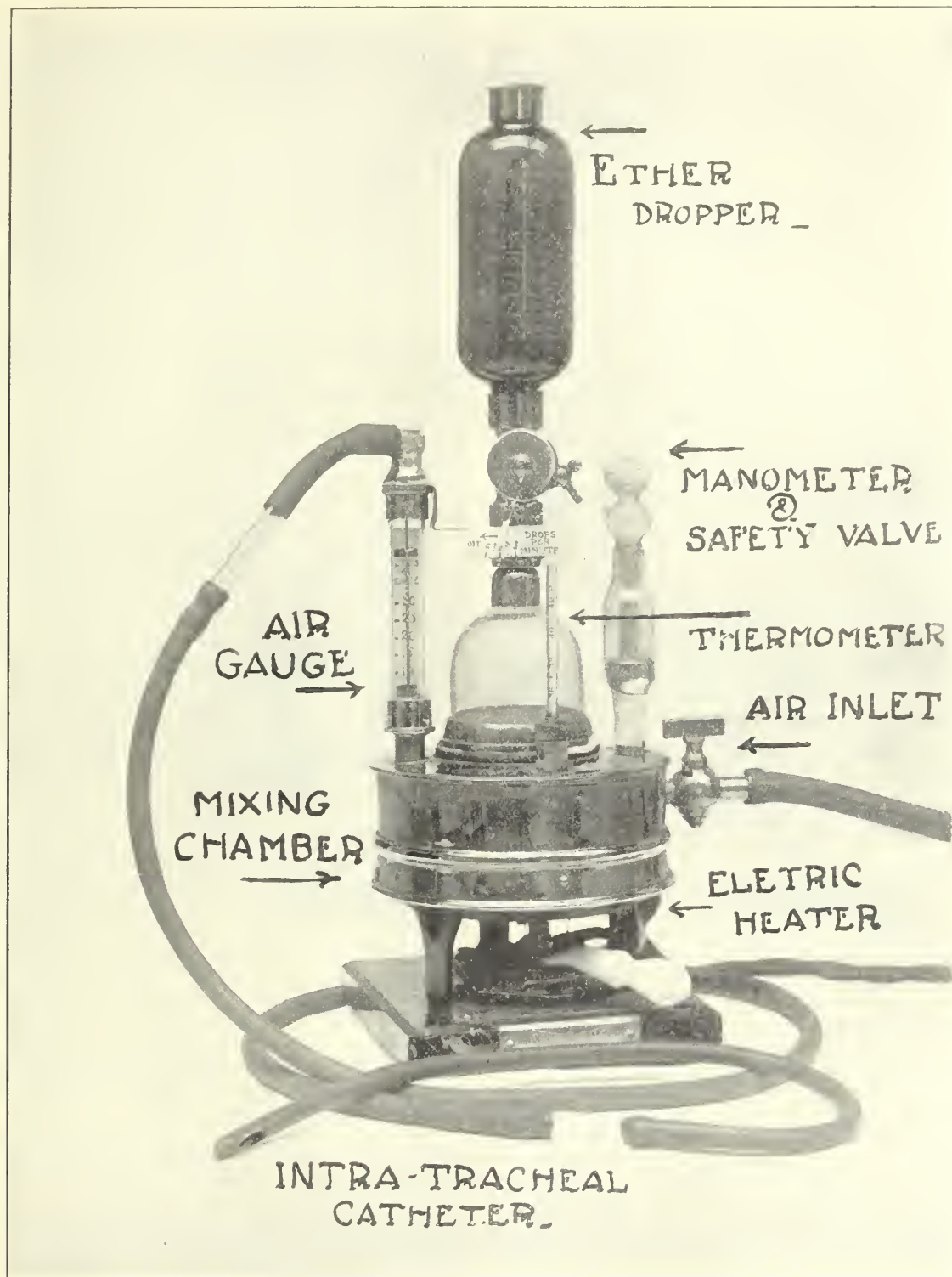
I try to handle the small intestines as little as possible, yet if I find them agglutinated and suspicious of a pus sack, I thoroughly investigate and if pus be present, I treat the sack the same as the primary focus. After all suspicious material has been removed, abdomen thoroughly cleansed and dried, I sew it up as if it were a clean wound. It is now that the interesting part of the after treatment begins.

The temperature usually drops in from twelve to twenty-four hours, but on the third or fourth day the temperature starts up again. This is your warning that there is infection in your wound. At this time you may not have free pus upon inspection, but you will notice that the wound is tender and does not present a healthy appearance. Remove one, and only one, of your sutures in the lower angle of your wound and make steady pressure from above down.

If necrosis is not sufficient as yet, it will be in the next twelve hours. I now remove all primary dressings and apply hot permanganate stupes and keep them hot, and have the nurse try to express pus after each dressing. You must attend to it yourself at least twice daily, and should you notice a suspicious hardening under the skin some distance away from original wound, immediately "go after it," make free incision into it so as to prevent an extension of the phlegmon.

CONCLUSION.

1. Practically total absence of post-operative distention and gas pains.
2. Drainage of abdomen is at all times unnecessary.
3. The exciting causative agent must be sought for, found and removed.
4. The abdomen should be as securely and completely closed as in a clean case.
5. Never close these wounds with a subcuticular stitch.
6. Always use interrupted sutures silkworm gut, through skin subcuticular fat, including the fascia of the rectus muscle. Never remove all the deep sutures at the same time, so as to prevent contraction of the skin, leaving an ugly scar.



INTRATRACHEAL ANESTHESIA.

By SAXTON POPE, M. D., San Francisco.

This is the present stage of development of the intratracheal anesthesia apparatus in use at the University Hospital:

Its principal features are compactness, a means for the accurate regulation of the proportion of

ether and air, electric heating to volatilize the ether, and of course the usual pressure and safety valve attachments.

The volume of air passing out of the machine is registered by a revolving float, bobbing up or down in a graduated glass cylinder—an idea adapted from Connell's apparatus.

Having the number of drops per minute and the liters of air per minute known, the percentage of

ether can be determined. An average of 14% per volume is required to maintain anesthesia.

The air is supplied either from an electric pump, a compressed air tank or a foot bellows.

This apparatus has been used repeatedly for intratracheal anesthesia and has served its purpose most admirably.

VACCINATION AGAINST TUBERCULOSIS WITH VON RUCK VACCINE.*

By FRANK NEALL ROBINSON, M. D., Monrovia.

For a number of years Dr. Karl von Ruck of Asheville, N. C., has been working along the line of immunization in tuberculosis. Ever since the introduction of the watery extract of tubercle bacilli (1897) his whole endeavor has been to improve this product, and to this end his studies have been in experimentation with the several component parts of the tubercle bacilli, and their action on the immunizing mechanism. When Bordet and Gengou first published their experiments in "Complement Fixation" he was among the first in this country to see the possibilities of it, and began experimenting with it in his work in his research laboratory.

About a year ago (May, 1912) he gave to the profession the first published account of the "vaccine" and the full detail of his experimental work to prove that this product would stimulate the organism to the formation of antibodies against tubercle bacilli infection, and showed that the serum from the patient immunized would dissolve virulent living tubercle bacilli outside the body. He also showed by the "complement fixation" test that, after an injection of the vaccine, "fixation" would take place in about five days.

The precipitins and agglutins were also increased at the same time as the bacteriolytic power of the serum. Those of you who are not familiar with Dr. von Ruck's work should write him for his reprints covering these experiments, as time precludes the possibility of my incorporating the immense amount of work in a paper of this character, whose scope is purely of a clinical nature.

These experiments prove the value from a laboratory standpoint of this preparation, but to substantiate these laboratory experiments on animals he vaccinated a large series of human beings (over 400), all of whom showed, following the injection, an increase in antibodies, with improvement to the point of "clinical cure" of their tuberculous condition. Up to this time the product had been used for vaccination only, that is, in cases of non-tuberculous, who were exposed to infection, such as children, and older ones in contact with active tuberculous, as well as in cases of glandular, bone before secondary infections, and latent pulmonary lesions; recently he has recommended it in cases where, while active, secondary infection has not taken place, as in pulmonary and glandular, and in bone lesions, especially where no sequestra are present or secondary infection with pus organism has not taken place—as a method of treatment.

These later cases for treatment must be picked with caution, and it will be here where we will find we are more in doubt as to the method to pursue, for it is hard in many of these cases (see case 13, quoted later) to pick those for "treatment dose" and those for "vaccination dose."

With the introduction of this product, I immediately began its use, and will report tonight on a series of about thirty cases, which I have vaccinated during this period, with the findings on examination, the reaction, dosage, and results obtained. I have furnished to several of my colleagues the vaccine for use in their practice, and I hope they will favor me with a brief outline of the results they have been able to obtain, so that I may incorporate their results with mine, to swell the list, to the end that we may learn its usefulness clinically.

In one of the last communications I received from Dr. von Ruck he informs me that after September 15th, 1913, the vaccine will contain but .5% of protein and the necessary amount of fat, while formerly 1% was incorporated in the product, but he finds precipitation takes place in the 1% solution, so that hereafter the dose of the vaccine will be twice as much as before the above date.

The following cases will serve to illustrate the value of the vaccine as an active immunizer in later lesions and in the apparent non-tuberculous:

Case No. 1. Miss D., age 8.—Had pneumonia, followed by right-sided empyema, which was operated and case drained and healed, but ran persistent temperature of one to one and a half degrees; case referred to me by Dr. Townsend of Long Beach.

Examined lungs, showed no apparent change of breath sounds of a tuberculous nature, but an area of dullness to the right of the mediastinum and a positive tuberculin reaction led me to believe we had an infection of the mediastinal lymph glands.

Treatment: Vaccinated with .3 cc. of vaccine, marked reaction, temperature 101°. Area quite red and infiltrated for three days. Temperature receded to normal in one week, and has remained normal to date. Child gained 5 lbs. the first month.

Conclusion: Examination at end of thirty days showed smaller area of dullness to right of mediastinum. Four months after dose of vaccine area could not be found.

Case No. 2. Mrs. D. (mother of child). No history of any infection. No evidence of any lesion in lung. Complained of tiring with slight overwork.

This dose was given simply because she asked for it as a precautionary measure. No tuberculin test was made, as it was not deemed necessary.

Treatment: Vaccinated with .4 cc. vaccine. A very severe reaction took place in 6 hours, with headache, backache, limbache, temperature 102°, arm red and infiltrated. She was ordered to bed, where she remained for 48 hours, when reaction began to subside, temperature began to fall on the third day and by the fifth day was back to normal. She had a sore arm for eight days.

Conclusions: Patient gained 4 lbs. the first month, and when last seen, four months after vaccination, was in good health and had gained in all 10 lbs., weighing more than she had ever weighed in her life, and felt better than for years. This case emphasizes the latent case.

Case No. 3. Mr. D. (father of child).—Had never been strong all his life, took cold frequently. Had

* Read before the Foothill Medical Society, October 13, 1913.

had to leave position nine years ago and go to Sierra Madre for a winter, owing to a dry cough which had persisted for months, since which time has been in apparent good health.

Examination showed old scar (diagnosed as such) at apex of right side, no activity. Temperature normal.

Treatment: Vaccinated with .3 cc. vaccine. Reaction within 6 hours. Temperature $101\frac{1}{2}^{\circ}$. Backache, headache, sore arm. Had to remain in bed for 24 hours. All symptoms of reaction disappeared in three days, except arm, which remained sore and red for one week, gradually fading away.

This case was not seen again for four months, patient had gained 12 lbs., and says he has not felt as well since he was 16 years old.

Case No. 4. Mrs. N. (nurse).—Has been constantly with tuberculous patient for three years. Complained of tiring easily, but no cough. Has been losing weight lately and running slight ($99.2-5^{\circ}$ to $99.4-5^{\circ}$) temperature in afternoon. Has been frequently (pulmonary) examined, and told was not tuberculous. Tuberculin reaction positive.

Treatment: Vaccination with .3 cc. vaccine. Reaction not severe, came in about 12 hours, headache and body ache. Temperature reached 100° as the highest in 24 hours and then fell to normal in the next 24 hours, and has been normal since. Arm sore (red and swollen) for a week, and painful to touch.

The fatigue in the afternoon remained with the case for about thirty days, notwithstanding she carried no temperature, when it disappeared and she has been perfectly well to date.

Case No. 5. D. R., age 12.—Mother tuberculous and uncle, who lived with family for a number of years, was tuberculous, but came south and received an "apparent cure." Cervical glands enlarged. Tired easily on exercise, would have afternoon temperature of $99.2-5^{\circ}$ to $99.4-5^{\circ}$, very nervous. Took cold very easily.

Treatment: Vaccinated with .2 cc. vaccine at 4 P. M. Severe reaction. Temperature 102° to 103° . Arm very sore. Could not dress, so remained in bed for two days. Third day temperature gradually subsided, until on fifth day following injection, temperature was normal. This boy improved, gained weight, and the tendency to colds left; glands had entirely disappeared in three months. Tire left.

Case No. 6. Mrs. H. G. R., age 38, mother of two children—Never been well since birth of second child (five years). Tired easily. Could not gain weight, appetite poor. Fall colds accompanied by cough. Nervous.

Examination: Changed breath sounds, right upper lobe. Temperature $99.2-5^{\circ}$ to 100° on fatigue. Tuberculin test positive.

Treatment: Vaccinated with .3 cc. vaccine at 10 A. M. By bedtime severe reaction, with arm swollen and painful. Temperature reached $101.2-5^{\circ}$ by 4 P. M. that day. Restless all night, and the following day had to remain in bed. Temperature gradually fell to normal by fifth day. Arm still remained swollen and sore for a week. Three months afterwards had gained 5 lbs., feeling strong, and has had no temperature since the fifth day following vaccination.

Case No. 7. Miss E., age 23.—Brother in terminal stage of tuberculosis. Temperature 99° to $99.3-5^{\circ}$ in afternoon, tired easily, slight cough.

Examination: Changed breath sounds, upper left lobe. Tuberculin test positive.

Treatment: Vaccinated with .3 cc. vaccine at 11 A. M. Slight reaction. Arm sore and red. Temperature 100° by 8 P. M. Reaction passed off in 36 hours and temperature normal at the end of second day. Cough had disappeared by end of first month. Gained in weight 4 lbs. first month. The girl was quite neurasthenic, but by end of

third month most of these symptoms had disappeared, excepting girdling headache.

Case No. 8. A. S., age 6.—Mother died with pulmonary and laryngeal tuberculosis. No enlarged glands. No signs of tuberculosis.

Treatment: Vaccinated with .2 cc. vaccine. No local reaction or temperature. This case illustrated the effect of a dose on a non-tuberculous showing the diagnostic value. Notwithstanding no reaction agglutins and precipitins increased.

Case No. 9. R. W., age 6.—Father tuberculous. Had been active, but was an apparent cure at this time. Tonsils and cervical glands enlarged. Anemic, listless, restless at night.

Treatment: Vaccinated with .2 cc. vaccine. Temperature 100° . Area slightly red and indurated. Temperature returned to normal in 48 hours and soreness left arm on fifth day. One month after vaccination cervical glands markedly diminished to size of small pea. Slept well, color improved. Left for home in the Middle West.

Case No. 10. Mrs. P. H. C.—Husband tuberculous, but at present an apparent cure. She showed no signs of tuberculosis. Treatment: Vaccinated with .3 cc. vaccine. Slight reaction, arm sore, temperature $99.2-5^{\circ}$. Temperature normal in three days.

Case No. 11. Baby C., 2 years old (daughter of above).—No signs of tuberculosis.

Treatment: Vaccinated with .1 cc. vaccine, slight reaction, slight sore arms, no rise in temperature.

Case No. 12. Miss S., age 26.—Slight cough attributed to cold, tires easily, loss of weight. Temperature 99° to $99.4-5^{\circ}$ in afternoon and evening. Appetite poor, lost weight, sleep poor.

Examination: Changed breath sounds, upper right lobe.

Treatment: Vaccinated with .3 cc. vaccine. Reaction in 24 hours. Arm sore and red. Temperature 102° for 24 hours, when dropped to normal on second day and normal since. One month after cough gone, gained 4 lbs., slept good, tire gone, breath sounds improved.

Case No. 13. Miss D., age 25.—Active lesion found in the upper right side with moisture upon deep breathing and coughing. Tubercle bacilli found in the sputum, but she raised only a small quantity of sputum each morning. Temperature 100° to $100.2-5^{\circ}$. Cervical glands enlarged both anterior and posterior.

Treatment: Vaccinated with .3 cc. vaccine. Marked reaction within 12 hours. Temperature $102\frac{1}{2}^{\circ}$, backache and headache. Temperature fell to 99° within three days. Arm remained sore for 10 days. Temperature remained at 99° for almost a month, during which time she gained 22 lbs., felt fine, ate well, slept well. No expectoration, coughed slightly in the morning. Second dose of vaccine .4 cc. given at the end of 30 days. Slight reaction in both temperature and arm, which subsided at the end of 48 hours, with the temperature remaining at 99° for 20 days, after this injection, during which time this girl gained 6 more pounds. Exercise now allowed her each day, in the form of a walk, and a third injection at the end of 30 days from the second injection with .6 cc. vaccine. Breath sounds have entirely changed over the area involved, and no moist rales, but evidence of scar. The balance, 17 cases in all, are of no special interest from a clinical standpoint, excepting that they proved to be non-tuberculous, responding in no way to the injection of from .4 cc. to .2 cc. of the vaccine. In a number of these cases, I carried out the precipitin and agglutinin tests and found these tests showed marked increase, following the injection.

I submit this simply as a preliminary report and hope at some future time to follow it with a list of cases treated by the vaccine.

TREATMENT OF GONORRHEA IN THE FEMALE.*

By JOHN C. SPENCER, A. B., M. D., San Francisco.

Before proceeding to the consideration of the subject named in the title, particular stress is laid upon making certain of the diagnosis of gonorrhea. The time-honored method of making a smear on a slide or cover-glass, then staining and demonstrating the presence of intracellular diplococci, will not stand the test of more modern methods of accuracy. Until within fairly recent times it has been customary to rely upon the Gram-stain as practically a specific diagnostic stain. This stain acts identically similarly with the micrococcus catarrhalis. As is well known, the latter organism morphologically so closely resembles the gonococcus that the two are only distinguishable culturally.

Cultures—The gonococcus is notoriously difficult of cultivation. It may be obtained, when obtained at all, usually by the use of material from a recently infected case. The culture-medium most commonly resorted to is either a blood-agar or an ascitic-agar slant. As a control, an agar slant should be made also, which is kept at room temperature. A growth upon the latter which morphologically resembles the gonococcus will undoubtedly be the micrococcus catarrhalis, since the gonococcus will not grow upon plain agar.

Complement-Fixation Test—This test, like all those of this character, is a group reaction and while if positive, is quite reliable, if negative, does not exclude the possible presence of a focus of gonorrheal infection somewhere in the body. Thomas¹ in a recent article says: "In women, positive reactions are rarely obtained unless the cervix has been involved." Thus while the complement-fixation test may be regarded as a valuable diagnostic adjuvant, at present it is only such, hence the cultural test is the most reliable one. At least it eliminates guesswork as far as possible. To this the patient is entitled.

As in men, so in women, there are all possible clinical combinations of gonorrhea, depending on virulence of strain and natural resistance of the individual. Many women regard a leucorrhea, especially when not profuse, as a minor, though incidental, attribute of the sex. Some women are so scrupulously cleanly that although there may be a catarrhal discharge from the uterus, by assiduous douching, even daily, it is kept flushed out, so that when questioned they will honestly deny that there is a discharge. Yet men with an unquestionable gonorrhea will present themselves with a history of coitus with but one woman. Sometimes for the reason above stated, the woman when charged with being the source of the infection, will indignantly deny the charge. If examination is sought or permitted and made sufficiently searching, as a rule, the presence of a gonorrhea may be demonstrated somewhere in her genital passages, most commonly in the cervical

canal. Especial stress is laid on the necessity of a most careful search in the cervical canal for the possible presence of gonococci, when the ordinary evidences are apparently lacking or at least not readily discernible. It frequently happens that no catarrhal secretions will be seen within the os externum, and cervix and vagina will appear perfectly clean, yet by a very careful scraping of the cervical mucosa with the platinum loop, the epithelia and the interepithelial spaces may be sufficiently disturbed so as to yield material, which on culture will demonstrate the presence of typical gonococci. This procedure, if unsuccessful at first, may be repeated, possibly after a preliminary irritation with a $\frac{1}{2}$ -1% solution of silver nitrate, until the cervix has been eliminated as a possible source of infection.

When gross clinical evidences are lacking, one should not overlook Skene's glands at the external urethral meatus, and the ducts of Bartholin's glands.

As in men, so in women, each case is a law unto itself. No routine treatment should be attempted. The locus of infection should be established and the treatment applied according to the needs of each individual case. Certain basic principles of treatment are broadly applicable. The bowels should be kept freely open, preferably with a saline; food should be of the simplest character, reduced in some cases to a milk diet; the ingestion of any substance which is excreted through the kidneys and is notoriously irritating to the mucosa of the genito-urinary passages should be sedulously avoided; rest, preferably in bed, should be enjoined during the acute stages of the infection; there should be a daily bath, care being taken to avoid chilling of the surface, whereby local congestion may be augmented.

Vulvitis—When the infection involves the vulva diffusely, more especially the urethra, the patient will derive much relief from the local irritation by very hot sitz-baths, or by immersing the entire vulvo-anal region in a receptacle containing hot water or normal salt solution, having a temperature of 110°-120° F. If plain water is used one of the liquid soaps containing cresylic acid, a congener of phenol, may be used. The effect of the latter is not only cleansing, but slightly anesthetic, as well as germicidal. Supplementing this, there should be very hot irrigations at least three times a day, of not less than a liter of solution of one of the silver albuminate preparations, as argyrol or sophol (1-1000) or protargol $\frac{1}{2}$ -1%. After drying by gentle pressure, the vulva should be covered by a sterile pad which should be changed frequently. Some patients with very sensitive skins will develop a marked erythema, or even excoriations in the inguino-femoral fold extending on to the inner aspect of the thighs. These surfaces may be protected by some simple dusting-powder with Venetian talc as its chief ingredient.

The method of giving the irrigations should be carefully supervised to insure the contact of the fluid with every part of the vulva and the urinary meatus.

Urethritis—If the urethra is involved it should

* Read at a meeting of the Urological Section of the San Francisco County Medical Society, Dec. 23, 1913.

be irrigated secundum artem, with moderate hydrostatic pressure to secure the ballooning of the urethral folds, but not sufficient to cause the fluid to enter the bladder. The undesirability of this latter accident when only the urethra is involved is self-evident, and may be easily avoided with a little care.

Cystitis—If the infection shall have invaded the bladder, then the irrigations of the solutions above named should be intravesical, care being taken that not more than 150 cc. shall be allowed to run in at a time and be immediately voided. The last portion should be retained in the bladder for at least an hour or until the next emptying becomes necessary. These intravesical irrigations should be given at least three times a day in order to get the best results. As a relief for the accompanying tenesmus, nothing short of an opiate will give the relief afforded by a hot sitz-bath. The patient may enter this at as high a temperature as may be tolerated for the moment, then by allowing water of a still higher temperature to run in, the patient will be able to endure it very well. As an adjuvant a very hot vaginal irrigation may be taken while the patient is in the bath. These baths may be repeated one or more times during the day. Supplementing the local treatment some form of balsamic may be given by mouth, preferably the salicylic acid ester of sandal-wood oil or some preparation of the same oil, not calculated to upset the stomach. It must not be forgotten that large doses of this oil tend to produce a certain amount of kidney irritation evidenced by a more or less severe backache over the renal area. Tenesmus may be severe enough to require the giving of an opiate, preferably codein in a suppository or by mouth. Great care should be taken to cleanse the vulvo-anal region before introducing the suppository, in order to avoid possible infection of the rectum.

The urine should be diluted by the ingestion of a copious amount of water, either plain or some uncarbonated alkaline variety. The diet should approach the milk diet as closely as possible. As the urine begins to clear and the tenesmus to subside, with the abatement in the local evidences of inflammation, the disappearance of urethral discharge and gonococci, the energy of the palliative and dephlogistic measures may be relaxed. After the urine has completely cleared, at least three cultural tests of the urethral secretions should be made at intervals of a week, in order to determine the presence or absence of gonococci.

Vaginitis—The strict localization of gonorrhea in the vagina is quite exceptional. Depending on the severity of the lesion, the treatment may range between antiseptic and astringent irrigations, including the solutions of the silver-albuminate preparations, to, in the case of erosions, a spray with the patient in the knee-chest position, in order to balloon the vagina fully, of a $\frac{1}{4}\%$ tincture of iodine in 95% alcohol, or with a solution of picric acid 2-5 gmm. to one liter. If chronic erosions exist they should be touched with the solid stick of silver nitrate or, for greater convenience, a bead of the same melted on to a silver probe. When

there are no erosions, the irrigations should be supplemented with tampons medicated with argyrol, protargol, ichthyol or formaldehyde, each in combination with glycerine.

The general hygiene of the patient must be similar to that in case of vulvitis.

Skene's Glands—When Skene's glands are involved, if the orifice of the duct may be found, which is usually fairly easy, through causing a minute drop of pus to exude upon squeezing, the gland may be destroyed by melting a bead of pure silver nitrate on a fine stiff silver wire and passing it to the bottom of the gland along the duct under local anesthesia, about in the way an infected paraurethral follicle in the male would be destroyed. If this prove ineffectual, then under local anesthesia a fine canaliculus probe such as is used in ophthalmological work may be passed to the bottom of the duct to act as a guide and the gland split wide open with a slender-bladed cataract-knife. The gland will heal from the bottom. The free drainage established by the incision will result in the destruction of the gonococci *eo ipso*.

Bartholinitis—Much pains should be taken to establish the presence or absence of infection of the vulvo-vaginal glands. Usually if infected there will be slight redness about the external orifice of the duct on the affected side. Pressure of the gland through the thickness of the labium majus on that side will cause a drop of pus to exude. In this will be found typical gonococci. Treatment of the gland may be by injection of one of the silver albuminate preparations through a very finely conical pointed all-glass syringe. This should be done daily. A frequent complication is the formation of an abscess of the gland. This should be treated on general surgical principles until fluctuation becomes evident, when the gland should be incised under local anesthesia if the abscess be small, or under general anesthesia if the treatment is to be more radical. The wound should be lightly packed with a gauze drain covered with ample pads. The packing should be continued until healing is well established.

Endocervicitis—According to figures in Norris' work,² the cervix is involved in 80% of the acute cases and in 95% of the chronic cases. In acute cases no treatment is permissible as directly applicable to the cervix. Only vaginal irrigations of the bland antiseptic solutions should be used, supplemented by glycerinated tampons containing one of the silver albuminate preparations or a half-saturated picric acid solution.

Some cases are practically chronic from the outset. The majority rapidly pass from the acute to the chronic stage. As an essential preliminary to the local treatment of the cervical canal, the thick plug of mucus filling and extruding from it must be removed by gentle swabbing with cotton-wrapped applicators dipped in some alkaline solution such as Dobell's. This is in order to insure more intimate contact of the medication with the infected mucosa, and *eo ipso* with the gonococci in the intercellular spaces. As to the choice of medication to be used in any given case, the treatment must

be largely empirical at the outset. It is well to start with a solution of one of the silver albuminate preparations, and feeling one's way, determine the degree of tolerance of the patient. If irrigations are used, great care must be observed that there shall be an unobstructed return flow of the irrigating fluid, alongside of the slender irrigating nozzle, otherwise the fluid may find its way through the internal os and cause painful uterine contractions, as well as render the endometrial mucosa liable to infection. Here again the dilute solution of iodine above referred to may be used. Many authorities resort to the application on a probe or applicator of full strength tincture of iodine or the Churchill's tincture. Others again, to the gentle introduction of slender wicks of medicated gauze up to the internal os. These are held in place by a glycerinated tampon. A thread should be attached to the lower end of the wick to insure its withdrawal with the tampon. The introduction of a foreign substance, as a wick, while insuring prolonged contact of the medication, is liable to cause erosions of the cervical mucosa. Some patients fail to improve under the application of the above form of treatment. In such event the application of a pure culture of lactic acid bacilli, or of yeast, owing to their destructive effect on the gonococcus, will bring the infection to an end. Another therapeutic measure very highly recommended by Swinburne of New York, is the application of electricity in the form of the high-frequency violet light current through a suitable glass electrode. The results are varied according to the patient. Howard Kelly in his work on gynecology highly recommends suitably repeated cauterizations with the actual cautery. In a personal letter to the author of the paper, he specifically recommends persistence in this form of treatment. It is certainly drastic and has not yielded the desired results in the author's hands, perhaps owing to the limited number of cases available. The cautery point should be slender and conical, and applied radially, removing it after each stroke in order that the patient shall not feel the heat in the vagina. The reaction is not severe and results in a slough which, after separation, leaves a clean surface.

Curettement of the cervix followed by application of some caustic, is mentioned only to state that in the author's experience it is not followed by the elimination of the gonococcus unless there is practical destruction of the mucosa by some substance like zinc chloride.

The most radical treatment of an intractable infection is an amputation of the cervix. With this method the author has had no experience.

In the foregoing, the attempt has been made, in a more or less sketchy manner, it is true, to give the results of the author's personal experience. No attempt has been made to exhaust the subject, since no reference has been made to the involvement of structures beyond the cervix uteri, such as the uterine endometrium, the adnexa, or com-

plications arising in other more or less remote structures or organs.

1. Thomas, B. A.—*Amer. Jour. of the Med. Sciences*, November, 1913.

2. Norris, Chas. C.—*"Gonorrhoea in Women"*; W. B. Saunders Co., 1913.

ROENTGEN-RAYS AND MESOTHORIUM IN GYNECOLOGIC PRACTICE: REPORT ON THEIR APPLICATION AT SEVERAL GERMAN UNIVERSITY CLINICS FROM PERSONAL OBSERVATION.

By HENRY J. KREUTZMANN, M. D., San Francisco.

Before I start to narrate my observations on application of Roentgen-rays and of Mesothorium in diseases of women, as I saw it at different German university women's clinics during a visit in October-November, 1913, I wish to make a personal remark.

Having enjoyed a good medical education with excellent clinical facilities, it was but natural to me all through my professional life as a physician to be rather conservative, to adhere to what I had learned during the time of my training as student and assistant physician. There is wonderful, rapid progress in the science and practice of medicine and I have endeavored to keep in line by reading good periodicals, by listening to good papers, by traveling and visiting the clinics and lectures of leading men. But I have always considered it a lack of fundamental medical education to rush to every new fad in medicine, to take up everything new that was placed before us as *the* thing, only to be dropped in a short time as worthless.

Kindly judge me according to these "confessions," if in the following narrative I might appear to have become somewhat extravagant in my views.

I cannot resist to be quite enthusiastic from what I saw and I make the following general statement: We are entering in a new era in curing neoplasms of every kind; regarding cancers and tumors we are now in the same position as we were about forty years ago in combating wound-infection. Before the Lister era, the ravages of wound-infection after operations and injuries were appalling. Lister initiated the battle against nosocomial gangrene, erysipelas, sepsis, pyemia, so common in the pre-Lister days. Lister was ignored, antagonized at first, but on his initial fundamental work has been built the great structure of present day asepsis, that has rendered wound-infection a thing of the past, unknown to the younger generation and that has made possible the development of modern surgery.

There is no doubt in my mind but that the steady development (with the usual, unavoidable setbacks) of Roentgen-rays and the rays of the radio-active substances will eventually lead to a sure, painless and harmless cure of all sorts of neoplasms, benign and malignant; there are even prospects of the cure of infectious diseases also (tuberculosis, sepsis) through the agency of these rays.

My observations and my interests are entirely

centered in and restricted to the application of Roentgen-rays and of Mesothorium to diseases peculiar to women.

I shall first speak about Roentgen-rays in gynecologic practice. For diagnostic purposes, X-rays were never applied to any great extent, neither in obstetrics nor in diseases of women; attempts to facilitate the diagnosis of pregnancy in utero, of extrauterine pregnancy, of pelvic deformities and of other conditions were made, but not with great success until quite lately.

The first application of Roentgen-rays for therapeutic purposes in gynecology was made by a German physician, shortly after an American, then a French physician used the X-rays to the same end, but it was Prof. Albers-Schönberg in Hamburg, who worked out a method of application in gynecology; he used it in many women with uniform good results. Others took up his method, but for one reason or another not all were satisfied with this method; modifications were tried; the greatest advance was made at the Frauenklinik of Freiburg under Prof. Krönig by his assistant, Dr. Gauss. Through many painstaking and time-absorbing biologic experimentations on animal and plant life and through many experiments in physics and therapy, a technic has been developed by these gentlemen, through which it is possible to obtain the desired end in a short time with absolute safety and certainty.

The whole of the so-called *Freiburger methode* is expressed in one of these long German words: *Filternahkrcuz/cuerbestrahlung*, or if you like another one, *mehrstellige Filternahbestrahlung*, which mean: the application of the Roentgen-rays is done through a certain filter at a short distance and in such a way, that the rays entering the body from different fields reach the deep-seated organs crosswise, crossfire like.

To obtain these results, the Freiburg workers were obliged to change thoroughly the apparatus and appliances heretofore used in Roentgen work. With the assistance of expert technicians in the construction of Roentgen-apparatus, they succeeded in establishing a standard of most effective and workable Roentgen-apparatus and auxiliaries. The changes affect the Roentgen-tubes, the inductor, the interrupter, the filter, etc., etc.

It is impossible for me in this short essay to enter into details, which are many and varied. The object of all experimentations was to obtain in as short a time as possible the largest amount of hard, penetrating rays with exclusion of the useless, harmful, soft rays. The end of experimentation is not on hand by any means, further improvements are desired and sought.

When the gentlemen from Freiburg first published their method, the gynecologic world was shocked, terrible disasters were predicted, objections raised on purely theoretical reasons—but, as usual, one by one, the workers are adopting the Freiburg method; the disasters do not materialize and Roentgen therapy has become a well-founded, well-established method of treatment of different affections peculiar to women.

Roentgen-rays have already revolutionized the treatment of fibro-myoma uteri. The question is not any longer (as in the beginning of the use of X-rays on myoma uteri), which cases should be selected for X-ray treatment, but the question is now: which cases should be selected for operation? This means, that the routine-treatment of women with fibro-myoma uteri is not an operation any more, but the application of Roentgen-rays instead, and in a number of clinics (Heidelberg, Freiburg, München), which I visited, this indication is strictly carried out. Certain cases are not considered proper objects for X-ray treatment, such as very large tumors, rapidly growing tumors, pedunculated submucous fibroids and others; especially where the desirability of pregnancy is an object, here, as before, operations are performed. The action of Roentgen-rays in these cases is twofold: in the first place, the ovaries are affected. Experimental research on animals and examination of ovaries of women who had been treated with Roentgen-rays and later operated, show the ovaries in the state of "senile atrophy." In the second place, the fibro-myomata are directly affected; they either disappear entirely or are reduced in size to different degrees.

Objection to the use of X-rays for fibro-myoma uteri has been made on the ground that an error of diagnosis may occur, that a fibro-sarcoma may be taken for a fibro-myoma, or that a co-existing cancer may be overlooked. Aside from the great rarity of these sarcomatous tumors or that coincidence, it must be stated, that careful observation will in every case very soon disclose the true nature of the growth; it might be added to this that Roentgen-rays may yet be found directly curative for sarcoma and carcinoma.

The advantages of X-ray treatment of fibro-myoma uteri as compared with an operation are manifest.

There is absolutely no mortality from the treatment. The same cannot be said of surgical work; if an operator selects his cases carefully, he may well be able to perform 50 to 100 hysterectomies without a death, but this does not represent the true status of mortality after operation for fibro-myoma uteri. If all operated cases were published, I have no doubt, a mortality of at least 5% would be found.

When treated with Roentgen-rays, the woman does not need to enter a hospital, all she has to do is to go to her physician at certain times, be treated and return to her usual life and duties. No dread and anxiety before an operation; no pain, thirst or inconvenience, nor ill-effects (thrombophlebitis, adhesions, ventralhernia) after an operation.

Next to fibro-myoma uteri it is the so-called metropathia hemorrhagica, where Roentgen-rays have been applied most successfully. We understand with this term hemorrhages from the uterus, where no pathologic changes are present in the uterus; the bleeding is caused by changes in the ovary, most probably under the influence of changing innersecretion of the ovary, especially when

this organ is nearing the final stage of its physiologic functions. These anticlimacteric hemorrhages at times assume an alarming character, at the same time they are difficult to control, curetting will be only of short benefit; frequently resort is had to hysterectomy. Aside from these anticlimacteric hemorrhages, irregular floodings will occasionally persist for years, to the greatest annoyance and uneasiness of women, entering the climacterium. In all these cases Roentgen-rays act truly: cito, certe et jucunde. The existence of a cancer will certainly not be overlooked by a careful physician in any of these cases; I just mention this, because theoretic objections have been raised on this point.

Roentgen-rays are furthermore used with great benefit in tuberculous affections of the female genital organs and of the peritoneum.

I have besides seen at München two charts of puerperal fever cases; temperature 104, pulse 120-130; all the symptoms of typical puerperal sepsis, in both cases an application of X-rays had been made, as for myoma uteri; temperature and pulse dropped to normal, the women recovered rapidly. I just mention these two cases, without laying great stress on them.

There are other indications for the use of X-rays in gynecology; but there is diversity of opinion as yet, so I shall not discuss these affections. No difference of opinion exists any more as far as the safe and sure curability of metropathia hemorrhagica, fibro-myoma uteri and certain forms of tuberculous peritonitis is concerned.

The question may here be asked: who should apply Roentgen-rays in gynecologic therapy? For the diagnostic use of Roentgen-rays, non-medical persons may not be objectionable; but when it comes to apply these rays as a curative agent, in my opinion, physicians only must do this work. The reasons are manifold; the fact must not be overlooked that only to members of the medical profession is accorded the protection of the law, as expressed in the phrase "employing ordinary care and skill of the profession."

A most careful constant supervision of the woman treated with Roentgen-rays has to be done, to get results and to avoid disappointments and failures. This, in my opinion, is best accomplished by a physician who is thoroughly competent in gynecologic examination and familiar with the special technic of Roentgen deep therapy.

I shall now narrate my personal experiences with Mesothorium as I saw its application and results.

At the Heidelberg Frauenklinik, I saw two women treated.

1. Case History: Woman about 50 years old; the case had been considered "inoperable" by Prof. Menge; large cauliflower growth on cervix; parametria involved; outspoken cachexia, foul discharge. Three applications of Mesothorium, 60 m., had been made; the Mesothorium was placed in the vagina or directly in the cervix, left for 24 hours, while patient was in bed; application repeated in 14 days to three weeks. When the woman was demonstrated to me by Dr. Eymer, head of the rays laboratory of the Frauenklinik, the cervix appeared healthy, normal, small, uterus small, not freely movable; no more discharge; woman relieved of all symptoms; treatment was

still continued; Mesothorium placed inside the cervix.

2. Carcinoma corporis uteri with foul discharge and cachexia: Treatment intracervical; three treatments; all symptoms had disappeared; treatment continued.

At Freiburg, owing to the absence of Prof. Kroenig and of Dr. Gauss, who were both in America, I did not see any patients, only the instrumentarium was shown.

At München, through the kindness of Prof. Doederlein, I was enabled to see a few women, about ready to be discharged as "cured" after Mesothorium application.

1. A woman, whose case had been considered "inoperable," almost incurable, by Prof. Doederlein; large cauliflower tumor on cervix, etc. Several treatments. When I saw her, cervix appeared normal to the eye; relief of all symptoms.

2. Relapse after abdominal operation: in vagina a bluish, readily bleeding tumor had appeared of the size of a marble; when I saw her I found a whitish shining, scarlike, flat infiltration, not bleeding; several applications of Mesothorium had been made.

Both these women were still under treatment, not with Mesothorium, but with Roentgen-rays, owing to the scarcity of Mesothorium.

3. Relapse in pelvis after abdominal operation: When I examined her, vagina appeared normally contracted, scarry; no infiltration in pelvis found.

4. Rather young woman; abdominal operation: Relapse with infiltration in pelvis; when I examined her, vagina funnel-shaped, no signs of infiltration.

5. Considered an inoperable case, bladder and rectum had been affected. When I examined her, apparently cured; vaginal portion and uterus feels like an atrophied, senile uterus.

All the women appeared healthy, had gained in weight and were relieved of their distressing symptoms.

Prof. Doederlein told me in November, 1913 (and gave me permission to repeat his statements), that he had not performed any operation for cancer of the uterus since March, 1913, with one exception; that he had discharged the women, treated with Mesothorium, apparently cured. He divided his cases in three classes:

1. *Uncurable cases*—where the cancerous affection has become general or invaded neighboring organs; nothing on earth could save these women, neither operation nor Mesothorium; these women died.

2. *Operable cases*—These had apparently been cured by the application of Mesothorium, all manifestations of the disease had disappeared.

3. *Inoperable cases*—Here the application of Mesothorium first rendered cases "operable," then continued application had apparently effected cure.

Prof. Doederlein said that this was his present experience; that certainly nobody could as yet have any definite opinion; whether he would still be so enthusiastic in five years, that he could not know.

Needless to say, that wherever in these clinics the diagnosis of cancer had been made, the diagnosis has been verified by the microscope.

After München, I visited Berlin; at the Frauenklinik, Prof. Bumm's place, I saw Dr. Warnekros, head of the rays department. I was informed that Prof. Bumm had given up the use of Mesothorium altogether! they were using Roentgen-rays on uterine cancer; applications were made on the abdomen and directly on the cervix through lead-glass spec-

ula; the latter application was made continuously for one-half to one hour for days.

Mesothorium had been discarded, because severe injury to the bowels had been recorded after its use; several women had returned with strictures of the intestines. Prof. Bumm was to read a paper on his experiences with Mesothorium early in December. At the Charité Frauenklinik, apparently not much is done in ray-therapy; they have no Mesothorium and they use Roentgen-rays in a mild fashion.

In Hamburg I saw Prof. Albert Schönberg at work in his laboratory, employing the tubes for diagnosis, surface treatment and deep therapy. He is at the head of the Roentgen department of the municipal St. George Hospital with over 2000 beds.

If I review what I saw and heard about the application of Mesothorium and Roentgen-rays for the use of neoplasms, I believe that I am justified to maintain the opinion, that it is only a question of time and a safe and certain cure of these affections will be brought about by these rays.

Certainly this matter is in its incipency as yet; many experimentations have to be made, in order to find out the proper dose, the best method of application, time of exposure, protection against injury, filters, etc.

No doubt can exist about the power of the radio-active rays (including Roentgen-rays) to destroy living animal tissue, especially of the young, growing, proliferating kind and of the possibility, fully demonstrated already, to confine the activity of the rays to this growing, proliferating, neoplastic tissue, leaving a healthy scar instead.

I can see then, dawning before us, a time when women suffering from cancer of the womb (and of cancer of other organs) will be cured, permanently cured.

That much cannot possibly be said of our present day operative therapy of carcinoma uteri. If we look at the present state of cure of carcinoma uteri by means of operation without fear and prejudice, we are forced to admit that results obtained through operations are pitifully inadequate to our endeavors.

In the first place, many women die in direct consequence of operative interference for cancer of the womb, many more than some exceptionally good statistics of expert operators will show; the large number of deaths after hysterectomy for cancer through the length and breadth of this country is never made public.

Those who survive remain invalids in many instances, suffering from injuries to the digestive tract (fecal fistula) or from injury to the uropoetic system (urinary fistula, inflammation of bladder, pyelo-nephritis, etc.) and of other evil consequences.

But, worst of all, in almost all the cases, no matter how extensively operated, a relapse of the carcinoma occurs, sometimes as late as five to seven years after the operation. This fact is not altered a bit through statistics carefully worked out, by eliminating this case and that and arriving at the conclusion, that a permanent cure after operation is attained in 10 to 15 per cent. of all operated.

Personal experience, extending over many years,

is to me of greater value than all the juggling statistics.

Engaged for more than 25 years in extensive practice in the same place, I have been enabled to see, operate and follow up a large number of women suffering from cancer of the uterus; quite a few were operated by myself, others by operators in San Francisco and California, in the East and in Europe.

I must say that in all these years I have knowledge of only one woman who was permanently cured; I had seen her many years ago; an incipient carcinoma cervicis was diagnosed; diagnosis verified through the microscope by Dr. D. W. Montgomery; she was operated by the late Dr. Clinton Cushing with vaginal hysterectomy, and was living until a few years ago, when she died from *emphysema pulmonum* and heart affection.

I have long since come to the conclusion that the only chance for permanent cure of cancer of the uterus lies in early diagnosis and early operation. Cancer is, at first, a local affection and can be eradicated; if the disease has once spread to the lymph-system, then it is impossible, even with the most searching operation, to reach all the advancing, proliferating cells, since no sign exists to know how far the invasion has gone.

That, unfortunately, we see incipient carcinoma uteri seldom, is in my opinion due to the fact that women with carcinoma uteri defer to see a physician, because they are afraid of the operation, afraid of the suffering after the operation; they know that many die from the operation, that others have been miserable since the operation, and that after all, death from the dreaded disease was not prevented through the operation.

If the knowledge is once spread that cancer of the womb can be cured without an operation, without any suffering, women will see a physician when they notice the slightest irregularity or change in their genital sphere, especially at the critical age. If the physician in charge does his duty and examines carefully, then at last the time will be on hand, that an early diagnosis of cancer of the uterus, as long as it is a local affection, will be made and proper treatment will affect a permanent cure. Cases of advanced, incurable carcinoma uteri will become—if not altogether a thing of the past—at least a great rarity.

In this total absence of all fear of treatment, the consequent ready access to medical aid with the possibility of early diagnosis—in these things lies, in my opinion, next to the possibility of actual cure, the great, wonderful benefit that is to be derived for womankind through the steady, scientific development of Roentgen-rays—and radio-active rays-therapy.

To sum up, in conclusion, I wish to say: The application of Roentgen-rays in gynecologic therapy for the successful treatment of fibro-myoma uteri, metropathia hemorrhagica, tuberculosis and other affections is well established.

The successful application of the rays of Mesothorium in gynecology for the cure of neoplasms, benign and malignant, likewise the employment of Roentgen-rays for the cure of malignant growths

in gynecologic work, is as yet not fully established; mode of application, dose, scope of usefulness, final results and many other things, have as yet to be found and settled through various researches and experimentations and careful observations of the sick.

To draw conclusions for the practice, it may well be said that a physician can conscientiously employ Roentgen-rays in certain diseases peculiar to women; a physician who attempts the use of Mesothorium in gynecologic practice must be fully aware that he walks on unsettled, uncertain ground. Operations for cancer of the womb, of the breast, etc., must not as yet be discarded; employment of Roentgen-rays after operations for cancer is highly recommended as a preventive against relapse.

PERSISTENT CONJUNCTIVAL HYPERAEMIA AFTER CATARACT EXTRACTION AND ITS CAUSE—REPORT OF SIX CASES ILLUSTRATING THIS CONDITION.*

By P. de OBARRIO, M. D., San Francisco.

In the course of some detailed observations in two series of fifty cataract extractions each, my attention has been called to the fact of a certain hyperemic state of the conjunctiva. It has been of rather frequent occurrence to observe a slight irritation after extractions, but of no serious nature. This congestion of the conjunctiva is of the nature you are apt to find in healing wounds and in all cases it has subsided after the routine treatment of local applications either of heat or cold, according to the time expired after the operation. I lay stress on this matter, for it is my object to call the attention to the fact that it is not to this physiological reaction, so to speak, that I am to refer, but to some persistent vaso-dilator disturbance of obstinate character appearing immediately after the surgical interference and existing for a more or less indefinite period. This symptom may or may not be accompanied with pain, but as a rule there is no pain whatever.

The general course of such a case, as I will immediately relate, will, I think, demonstrate better my point.

A patient calls on you with a lenticular opacity of an advanced character justifying a surgical interference. The functional examination proves favorable, that is to say, the motility, tension, conjunctival and lachrymal apparatus, iris reaction, light perception, projection, etc., are found to be normal. There is no previous history of traumatism or otherwise which may lead to the supposition of deep-seated trouble, which may have been overlooked; in other words, we are dealing with a simple, mature, senile cataract of normal character, demanding interference and such interference granted.

You proceed in the usual accepted manner of extraction, there is nothing abnormal during the operation, and you are led to foretell a satisfactory result. There being no indication to disturb the patient, you do not interfere with the bandage till

the third day, say, when you remove it. On examination you are immediately struck with the fact that there is a marked hyperemia of the conjunctiva of an alarming nature. You naturally examine immediately the corneal wound, as you are led to believe that such a conjunctival reaction would be co-existent with a corneal infection. You are nevertheless pleasantly disappointed on finding there is no such condition. The corneal wound is normal, there is no iritic hernia nor entanglement of same in the corneal wound, the anterior chamber is formed, the pupil is central, black and circular, the sight good, no secretion. Taking all these data into consideration, you prescribe, say, the more or less continuous application of cold compresses of the solution of boric acid, this to be continued for 24 or 48 hours, but you notice no beneficial effect whatever. You then make use of heat, either in the dry form or by means of moist antiseptic solution of a mild character, such as the boric acid already mentioned. To this you give a fair trial during 48 to 72 hours or more, but you are again disappointed, for there is no betterment justifying its continuation. To make my story short, you make use of all other means in current practice and generally accepted in cases of localized congestions, but to no avail. There is then but one point to be taken into consideration, and that is as to the existence of some pathological condition elsewhere that, by reflex action, might influence in an indirect manner the vasomotor center of the conjunctival vessels, causing these marked hyperemic conditions.

You would probably start by draining the intestinal canal freely with a saline purgative, that is, if you have not done so from the very start, which I consider a good practice, and you would maintain it working with regularity. This, however, proves unsatisfactory. You make then a careful examination as to the existence of an undetected pathological condition in the ear or the nose or throat, or the larynx, or the cranial cavities, or the teeth, and you are impressed that none of these are in any way affected to justify such state of affairs, with perhaps the exception of the teeth. You find that there are one or several of them carious, that the first or second bicuspid are frequently so, that probably there is nothing left of them but the roots, that the gums in their immediate vicinity are slightly inflamed, that there is some pus secretion on pressure, that such roots have laid in place for a long time, that there is probably a small abscess at the apex—in a word, a pathological condition of an irritative character that might well explain the aforesaid hyperemic state of the ocular conjunctiva. You propose the extraction of these teeth, which is eagerly accepted by the patient, and in 48 to 72 hours all symptoms disappear, the cornea heals in a normal way and there is no ill-effect to complain of leaving a healthy aphakic eye.

A brief report of my cases will illustrate these points. Mrs. L. C. H., 65 years of age, consults me as to her rapidly failing sight of the right eye. On examination I find a senile cataract in a mature condition. The functional examination proves normal, and I propose the extraction. The operation offers nothing noteworthy. The patient suffers

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quite a nervous shock and the evening of the same day she has nausea and vomiting, which however subsided immediately. Next day the bandage was removed and the eye was found to be doing well. The anterior chamber was formed, the iris and pupil were normal, there was slight reaction of the conjunctiva. The bandage was replaced, and there being no indication, it was not removed till the fifth day. It was found then that there was no secretion, no pain, no photophobia, no synechia, but a very marked hyperemia of the whole conjunctival surface. The application of cold compresses was immediately begun and kept for five days, particular attention being paid to the functions of the intestines, prescribing as well a light diet. At the end of the fifth day, or ten days after the operation, there was no improvement whatever. The patient did not complain, her vision was fairly good, she slept well, and digested well, but there was this very marked homogeneous dull red congestion of the conjunctiva. I directed the application of hot fomentations that were continued again for five days, but there was no improvement. It was at this period that I made a thorough examination as before explained, and decided to have extracted two portions of carious teeth, the first and second bicuspid of the right side. In 24 hours there was a marked change for the better, and in three days all was well.

The second case is that of a man, R. C., 57 years of age, laborer by occupation, in good state of health. He had cataracts in both eyes. The left one being in better condition to be operated, I proposed to do so. The operation went on without any abnormal incident, and everything pointed to a rapid and normal recovery. The patient complaining of some pain, I removed the bandage after 24 hours. There was some congestion of the conjunctival vessels, which became more marked in the succeeding days. The routine treatment was instituted, but to no effect. The eighth day after the operation, I proceeded to examine the teeth and found the second bicuspid and first molar of the left superior maxilla in very bad condition. The extraction of these took place the next day and on the fifteenth day after the operation I discharged the patient cured with 15/20 of vision and able to read with plus 13 diopters.

The third case is that of Mrs. C. T., a woman of the middle class in good health. Her left eye had been enucleated about 10 years previous and as far as I could learn it was a painful atrophic eye as a consequence of an iridocyclitis of a severe character. Her right eye had suffered from plastic iritis as could be detected by a complete posterior adherence of the iris to the lens. There was a false membrane covering the entire pupillary area. With all this, the tension was good, the light perception and light projection were normal. Being her only eye, she was very anxious about the result of the operation, which I naturally prognosticated with some reserve. She took all chances and was willing to be operated. I proceeded as follows: After the corneal incision I performed a large superior iridectomy. I then found that the false membrane extended to half way between the pupillary border and the base of the iris, parallel with the latter, as if a circular piece of membrane had been inserted between the iris and lens, adherent principally to the iris. With the point of the cystotome I hooked the membrane from behind and with gentle traction I succeeded in extricating it in its entirety. As there were some portions of the iris adherent to the lens, I extracted the lens with the loop. The reaction was rather violent with a good deal of conjunctival chemosis, but very little pain. The chemosis subsided after a few days. The patient suffered then from periodical nocturnal orbital and ocular pains which subsided after the use of a saline purgative and the sulphate of quinine in 20-grain doses. The patient entered then in the period of marked hyper-

emia of the conjunctiva that characterized the previous cases, and with no tendency to recover. The second bicuspid and first molar of the right superior maxilla were found to have been carious a long period and at times painful with some swelling of that side of the face. After their extraction the patient had a non-interrupted cure.

The fourth case is that of P. L., a merchant, 63 years old. His right eye had been operated for cataract two years previous when he consulted me as to the condition of his left eye, which had a healthy non-complicated senile cataract with normal functions. There was no incident either during or after the extraction, but on the third day I noticed that dull red congested conjunctiva with no other symptom, which brought to my mind the previous cases that had been observed in my practice at long intervals. There was, as in the previous cases, an old carious tooth and a root of the first and second bicuspid of the left superior maxilla. Questioning the patient as to the behavior of his right eye when operated, he told me that it had healed with no accident whatever. All the teeth in the right upper maxilla were normal; this seemed to me a very instructive case, as it conclusively proved that the teeth must be affected on the side in which the operation is performed, so as to have effect. This was undoubtedly the case with my other patients. After the extraction of the bad teeth, the patient recovered with very good results.

The last two cases are hospital cases which offer great similarity in their behavior.

N. H., 24 years, laborer, had received a punctured wound of the right cornea while riding at night in the woods some two years previous. He noticed his sight began to fail him since then. He presented a traumatic cataract of slow evolution with a filiform anterior synechia. The functional examination being normal, the extraction was performed without iridectomy. There being no indication to the contrary, the bandage was not removed till the third day. At once I noticed that dull uniform redness of the whole bulbar conjunctiva without any marked secretion, no pain, a healthy wound and a perfectly transparent cornea, over a normally formed anterior chamber.

This patient was in my general surgical ward at Saint Thomas Hospital in Panama and received all necessary attention principally as I was particularly interested on account of the fact of his bringing to my mind the previous cases of conjunctival hyperaemia which he resembled so closely. The patient did not have any discomfort but his condition did not improve in spite of every kind of treatment. On the 16th day after operation, I personally extracted two old snags of the right upper jaw which apparently were not giving him any trouble, and to my satisfaction his eye cleared up in two more days.

The last case is that of N. P., a farmer, employed at one of the canal dredges. He was 65 years old, and presented bilateral simple senile cataracts that offered nothing particular and for which I operated him at the hospital.

His left eye, which was operated first, presented the typical conjunctival reaction which I have discussed in the previous cases. The teeth of the right upper jaw were at fault and after extraction all symptoms subsided. His right eye when operated later, gave no reaction such as he had in his left eye.

I may say that these cases are not very frequent, but that they are nevertheless encountered in practice in the tropical countries, and one must be prepared to meet emergencies, being never backward in clearing the field by doing away with the exciting cause.

I am led to conclude then:

1st. That in all persistent hyperemic conditions of the conjunctiva after cataract extraction with no other apparent symptom, the teeth may be the exciting cause that acting through the gyserian ganglion bring about the aforesaid result.

2nd. That as experience has taught me, the treatment of this condition is the extraction of the decayed teeth or imbedded roots.

I therefore recommend this practice in all protracted vaso-dilator disturbances after surgical interference in non-infected eyes, as a logical procedure worthy of being taken into consideration and backed with the experience of these few but well defined cases.

NOTE ON THE SATURATION-POINT OF SERUM FOR NORMAL LIPOIDS AND CHOLESTERIN.

By CLARENCE QUINAN, M. D., San Francisco.

MATERIALS.

Serum. A quantity of fresh blood was procured from one of the large packing-houses near San Francisco. Prime beef cattle were the source of supply. The blood was caught as it came from the throat incision in clean, dry glass jars. The stoppered, full receptacles at once were carried into the great refrigerator of the establishment, and after remaining there about 36 hours, the clear serum was aspirated into other containers. It was not considered necessary for the purposes of these experiments to collect the serum with full antiseptic precautions. The problem was rather to avoid contamination from unclean surfaces; in a word, to keep the specimens chemically clean. It seemed improbable that, in the brief experiment period, bacteria would multiply to a number sufficient to affect in a material degree the end results in tests of solubility, and, as a matter of fact, this element of error must have been very small indeed, for the control serum after 24 hours in the thermostat remained brilliant-clear, and to the naked eye presented nothing to indicate the presence of any considerable number of organisms. Bacteria were present, no doubt, but as yet probably had produced no extensive chemical changes.

Normal Lipoids. About one quart of fresh serum was mixed with five times its volume of absolute alcohol and the mixture was set aside for several days. The precipitated protein was then thrown upon a filter, and the yellowish, alcoholic filtrate was concentrated on the water-bath until of a sticky consistency. The relatively water-free residue was extracted with excess of absolute alcohol, the mixture was filtered free from inorganic salts, etc., again evaporated on the water-bath, and the residue then dried thoroughly at 100 Centigrade. The alcoholic extract of the serum obtained in the manner just described, was now thoroughly exhausted with absolute ether (distilled over metallic sodium), and the ether, finally, was distilled off, leaving behind a yellow, oily-looking mass of mixed lipoids. This substance was kept in a desiccator over solid calcium chloride until needed.

The fresh serum of healthy beef-cattle contains as a rule about 0.6% of fatty bodies which may

conveniently be spoken of as lipoids. In a series of animals the amount varies but little. The mixed fats yield cholesterolin upon saponification with alcoholic potash, and when the mass is oxidized with a mixture of sulphuric and nitric acids it gives a moderate reaction for phosphoric acid though, obviously, only a small amount of lecithin could thus be accounted for. The reaction of the mass is neutral.

Cholesterolin. Pure cholesterolin was prepared from human gallstones in the usual manner and the crystals were purified by recrystallization from absolute alcohol.

METHOD.

The plan followed in this investigation was to add a weighed excess of normal lipoids or pure cholesterolin to equal volumes of normal serum and serum previously modified in various ways by the addition of reagents, and then to determine, after a period of 24 hours in the thermostat, what portion of the lipoids, if any, had gone into solution. It was desired, especially, to alter the calcium relations of the serum, which, of course, could be effected without much chemical disturbance, and also to modify in a rather gross way the quality of the reaction, with a view to observe to what extent electrolytes play a part in the solution of the serum fats. The point upon which the greatest stress was placed, however, was that of the maximum solubility of normal lipoids and cholesterolin in pure, unmodified serum. Accurate estimations of the ether-soluble elements, obviously, were indispensable. In work of this character the lipid value of the normal serum remained, throughout, a constant, and was included in each extraction result; any increment of ether-soluble matter, therefore, could fairly be ascribed to the lipid enrichment.

Two series of tests were prepared each of which consisted of six flasks. One of these served for the cholesterolin tests, the other for those with normal lipoids. It will suffice to describe one such series in detail. The flasks were arranged as follows: 1. 25cc of normal serum, untreated, as control; 2. 25cc of normal serum. 3. 25cc of normal serum decalcified by the addition of .015 g. of ammonium oxalate in powder. (This is more than twice the theoretical amount of the ammonium salt required to precipitate the calcium, since, in a large number of gravimetric determinations of calcium as CaO in the ash of this serum the amount was practically constant at 0.0134 g. of CaO per 100 parts of serum). 4. 25cc of normal serum to which .030 g. calcium chloride was added. 5. 25cc of normal serum to which .5cc of $n/2$ hydrochloric acid was added, and, 6. 25cc of normal serum rendered hyperalkaline by the addition of 0.125 g. of sodium carbonate in substance. Each flask, depending upon the series, and with the exception of the control, received either 0.1 g. of cholesterolin or an equal amount of normal lipoids. The sealed flasks remained for 24 hours in the thermostat. All were treated alike thereafter. The contents of all were passed at once through unglazed porcelain candles and

the resultant clear filtrates were used exclusively in all determinations of lipoids.

In the quantitative study of the fatty substances held in protein matter, protracted extractions in a Soxhlet or other similar apparatus are always necessary if one is to satisfy the most exacting analytical requirements, and the outlay of time unavoidably entailed where an extended series of such extractions must be carried out is of course very great. However, all but a small quantity of the lipoids are taken up by the alcohol or acetone employed in the preliminary precipitation, and for work in which fairly exact quantitative results are desired and in which extreme accuracy is not essential, Soxhlet extractions may be dispensed with and reliance placed upon the thorough use of absolute alcohol, acetone and ether by direct extraction. The latter method therefore was employed in the present study. Naturally, the conditions of experiment as far as possible were carefully controlled, and the extractions were done in duplicate.

Five cubic centimeter portions of the clear, Berkfeld filtrates were pipetted into flasks each of which contained 50 cubic centimeters of pure acetone and the flasks were allowed to stand for one week. The precipitated protein was then brought upon a filter, allowed to drain, rinsed with 20 cubic centimeters of acetone, and again allowed to drain. The protein mass was then thoroughly mixed with 25cc of absolute alcohol, and after this had passed through the filter, 20 cubic centimeters of ordinary pure ether were used to rinse down the filter and contents. This was the exact procedure in each instance. The solvents were distilled off on the water-bath, and the residue was dried to constant weight on it. The anhydrous residue was then exhausted with 75 cubic centimeters of absolute ether, this in turn was distilled off, and the lipid residue finally obtained was dried to constant weight at 100° C. The values obtained are shown in tables I and II.

The unmistakable conclusion to be drawn from Table I is that cholesterol is nearly insoluble in normal serum. This interesting and important fact might have been safely predicted, *a priori*,—were it safe here to reason by analogy, from the chemical relations of cholesterol and its known insolubility in water. But then blood serum is by no means an ordinary aqueous solvent. There is oily matter dissolved in it, and oils are excellent solvents of many organic substances; ferments of one sort or another are present; esterification might be thought of and, perhaps, some allowance made for vitalism with its infinite possibilities. Had all the cholesterol been dissolved by the serum, in the five cubic centimeters of that fluid taken for the extraction twenty milligrams should have been recovered. The attempt to recover cholesterol from normal serum failed. The normal lipid value remained unchanged. In one or two of the test mixtures, however, it will be seen that small gains over the normal were noted. But these tests represented modifications of reaction or mineral content such as would be unlikely to occur in fact, and it is very probable that the single high value noted in the hypoalkaline specimen falls within

the limits of error inherent in the extraction method, and for that reason may be disregarded.

TABLE I.

Solubility of Pure Cholesterol in Serum. Duplicate analyses. 5cc of serum taken for each extraction. Figures show total extract soluble in absolute ether.

	Total ether extract 5 cc (a)	Total ether extract 5 cc (b)	Mean	Cholesterol found
Normal serum (control)	0.0291	0.0274	0.0282	
Normal serum and chol.	0.0290		0.0290	0.0008
Decalcif. serum and chol.	0.0300	0.0281	0.0290	0.0008
Hypercal. serum and chol.	0.0228	0.0150	0.0189	0.0093
Na ₂ CO ₃ serum and chol.	0.0295	0.0302	0.0298	0.0016
HCl. 5 cc n/2 serum and chol. ...	0.0310	0.0332	0.0321	0.0039

TABLE II.

Solubility of Normal Lipoids in Serum. Duplicate analyses. 5cc of serum taken for each extraction. Figures show total extract soluble in absolute ether.

	Total ether extract 5 cc (a)	Total ether extract 5 cc (b)	Mean	Normal lipoids found
Normal serum (control)	0.0291	0.0274	0.0282	
Normal serum and lipoids	0.0317	0.0334	0.0325	0.0043
Decalcif. serum and lipoids	0.0335	0.0329	0.0332	0.0050
Hypercal. serum and lipoids	0.0352	0.0301	0.0326	0.0044
Na ₂ CO ₃ serum and lipoids	0.0358	0.0339	0.0348	0.0066
HCl. 5 cc n/2 serum and lipoids	0.0321	0.0326	0.0323	0.0041

Somewhat more positive results were obtained in the tests of normal lipoids, although, considering the origin of the experiment material, it would have been reasonable to anticipate larger values. Approximately twenty per cent. of the lipoids added to the serum as enrichment were found in solution. And the rate of gain, as may be seen in Table II, was pretty uniform throughout the series. But, since the lipoids used in the experiments were native constituents of the test serum, and hence were ideally adapted for the purposes of a saturation test, it follows that the value noted, *i. e.*, 0.0325 g., or 65%, represents, actually, the maximum solution number of a normal serum for its own proper lipoids. The mean value for this serum was 0.56%. Comparing values, therefore, it is evident that, in twenty-four hours the serum added almost exactly one-tenth of one per cent. to its lipid content.

Conclusions:—

1. Pure cholesterol is very slightly if at all soluble in fresh bullock's serum.

2. Esterification of cholesterol does not occur to an appreciable extent in fresh bullock's serum *in vitro*.

3. The saturation-point of a serum for its own proper lipoids is only 0.1% in excess of the normal content.

REPORT OF A CASE OF SYSTEMIC BLASTOMYCOSIS.*

By HAROLD P. HILL, M. D., and E. C. DICKSON, M. D., San Francisco.

A certain amount of interest is attached to this case in so much as previously no case of systemic blastomycosis has been reported in California. We have had a number of infections with a type of fungus closely related but which differs in several characteristics from the blastomycosis and which with the exception of one case reported from Buenos Aires by Werincke seems peculiar to California. In 1894, Gilchrist described the first case of blastomycetic dermatitis and in 1902 it was recognized that the infection became generalized or systemic. Since Walker and Montgomery's report of that year, reports of systemic infection with blastomycetes have been frequently made, the large majority of these cases occurring in or around Chicago. The type occurring in California was first reported in 1894 by Dr. E. Rixford and a full report of cases occurring to 1905 was given by Dr. Ophüls, who suggested the name *oidium coccidioides* for the organism. The clinical course of systemic blastomycosis and coccidioidal granuloma has a close similarity. The chief differences between the two types of infection consist in the mode of multiplication of the organisms and their channels of distribution. The blastomycetes multiply by budding; the *oidium coccidioides* by endo sporulation. The former is distributed mainly by the blood, the latter by the lymph channels. It is not necessary to describe these organisms, their cultural characteristics or speculate as to their relationship. It is interesting to note that the case here described developed in California where previously only coccidioidal granuloma had been found and was an infection with blastomycetes.

CLINICAL HISTORY.

Angello Spilloto was admitted to the Stanford wards of the San Francisco County Hospital, July 6, 1912; a native of Greece, twenty-eight years old, of good family history, day laborer, working in McCloud in the summer and Sacramento Valley in winter. He worked on the railroad for a time. No history of previous complaints. Six months ago, while working for a cement company at Davenport, California, patient caught cold and spit up blood. This lasted for two months. Three months ago he noticed a swelling under the left lower eyelid, four days later a second swelling appeared under the alae nasi. A few days later, a third swelling came on the left alae nasi, then a fourth on the outer condyle of the femur. These were followed at intervals by swellings on forehead, legs and arms. At various intervals the swellings on the face broke down, discharged pus and dried up. He has lost weight and has not worked for some months; no loss of appetite, but gradual loss of strength. At one time he entered a hospital and had the abscesses incised.

The patient was emaciated, pigmented and covered with nodular masses, discharging ulcers and dried crusts. He had a slight cough, raised a

mucopurulent sputum, at times streaked with blood. Percussion of the thorax gave impaired resonance over the whole chest anteriorly except for an area in the right side at the level of the second and third ribs; right side posteriorly was flat to the spine of the scapula except for a dull tympanetic area at the inferior angle of the scapula. Left side posteriorly, impaired note over entire side. There was bronchial breathing at right apex and right base with amphoric quality at the inferior angle of scapula. Occasional moist rales scattered throughout. Nothing found in the abdomen—splenic dullness increased but spleen not felt; a few shotty cervical lymph glands. Temperature 101°, pulse 108, respiration 24.

There were fluctuating masses in the following regions: One, upper part sterno mastoid; three confluent in left temporal region, one junction clavicle and sternum; two on the anterior surface of left elbow, one lower third of left forearm, one region of the external malleolus left foot.

Ulcers were present on the right elbow, with protruding granulations; middle of right arm; right thumb, left elbow; external surface middle of right thigh and external surface of right knee and lower third of left leg.

Scars of healed ulcers were present under right eye, chin, lower lip, nose, right leg and foot.

The skin over the fluctuating masses was of normal color except when on the point of rupture. Fluctuating masses were never painful and rarely tender on pressure except around joints. The abscesses had a tendency to involve the deeper tissues and bone; new ones kept constantly appearing, frequently brought to notice only by the elevation of some portion of the skin. They contained from a drachm to many ounces of pus. The ulcers on knee and elbow had undermined edges, protruding granulations and were covered with a mucopurulent discharge.

Aspirated pus from abscesses was rather thick and coagulated into a gelatinous mass. Examined by Dr. Ophüls, it contained debris, pus cells and typical budding organisms of blastomycosis.

Antiformized sputum, centrifugized showed many blastomycetes to a field in all stages of budding.

On repeated examinations no tubercle bacilli were found.

Von Pirquet skin reaction was negative.

No organisms were recovered from the urine or feces.

Blood examination gave a negative Wassermann. Five blood cultures were negative for blastomycetes. The leukocytes varied from 10,000 to 16,000. Differential count showed a polymorphonuclear increase. The hemoglobin was 50%; red cells, 3,500,000.

Peritoneal and subcutaneous injections of guinea pigs were negative; pus rubbed on denuded skin area gave no result.

There was the characteristic growth on all culture media in from five to fourteen days.

Treatment: Abscesses were treated by incising and swabbing with tincture of iodine. Iodide of potassium was given 250 grs. per day and X-ray exposures; extract of blastomycete was prepared by Dr. Hirschfelder and a few injections given.

Course: That of a chronic pyemia; mild, septic, temperature, progressive emaciation and loss of strength, numerous recurring abscesses involving skin, deeper tissues and bone. A painful nodule appeared in the left testicle.

Treated abscesses healed best under iodine but new ones constantly recurred. No effect was seen from iodides, X-ray, or extract.

The course in the hospital was six months' duration—from the initial symptoms approximately one year.

The autopsy was performed about twenty-four hours after death.

Anatomical Diagnosis: Systemic blastomycosis involving the skin, subcutaneous tissue, bones, lar-

ynx, lungs, kidneys, testicle and epididymis. Parenchymatous degeneration of the kidneys and liver.

The body is that of an extremely emaciated, poorly developed male apparently about thirty-five years of age. There is marked anemia and moderate cyanosis of the lips and finger tips. The pupils are equal and dilated; there is no jaundice. Scattered irregularly over the head, face and neck are numerous shallow ulcers with soft, undermined edges, and with rough bases which are covered with purulent material. Many of these lesions are covered with thick, dirty brown crusts which in some places project nearly a centimeter above the surface of the skin. When pressure is exerted over the skin in the region of the ulcers, a large amount of thick creamy pus exudes from beneath the undermined edges.

On the right side of the neck, immediately posterior to the sterno-cleido-mastoid muscle, is a large, irregular ulcer with deeply undermined edges. Similar lesions are situated over the left clavicle, in the left axilla, and on the arms, forearms and hands of both upper extremities. There is distinct limitation of movement of the right shoulder, and on the dorsal surface of the right wrist is widespread destruction of tissue which extends into and exposes the bone. Palpation of the wrist causes crepitation of the small bones, and there is a well-marked wrist drop. About the middle of the left forearm is a large, deep ulcer which extends into the bone and has denuded it for a considerable distance.

On the back, over both shoulders and over the sacrum are large fluctuating masses which are apparently immediately beneath the skin. At the side of the abscess over the sacrum is a small round opening from which a large amount of creamy pus escapes. In both axillæ and over the front of the chest on the left side are similar smaller fluctuating masses. The skin over these areas is quite thin and of a peculiar bluish tint.

The abdomen is retracted, and on the left side is a large, old scar, evidently from a burn, which extends over the crest of the ilium and on to the anterior surface of the thigh, causing a marked contracture of the thigh. The inguinal lymph nodes are distinctly enlarged, especially on the right side.

On both thighs are large subcutaneous abscesses in which is marked fluctuation, and on the outer surface of the left thigh is a large, shallow ulcer with deeply undermined edges. A probe is easily passed eight centimeters above the upper margin of the ulcer, and six centimeters below the lower margin, beneath apparently healthy skin. The left knee is markedly contracted and there is widespread ulceration over the anterior and lateral surfaces of the knee exposing the bone. Smaller ulcerations and abscesses are found over both legs and feet.

There is practically no subcutaneous fat over the chest and abdomen, and the muscles are dry and atrophic. A small subcutaneous abscess on the left side of the chest is found to be continuous with an opening in the third rib, through which pus escapes when pressure is applied.

There is a small amount of clear yellow fluid in the peritoneal cavity, the omentum is atrophic, and the gastro-colic omentum contains many enlarged lymph glands.

On removal of the sternum the anterior mediastinum appears normal. Both pleural cavities are obliterated by dense fibrous adhesions. The pericardial sac contains about twenty-five cc. of clear fluid. The heart is dilated but the valves and the coronary arteries are clear.

The left lung shows an old scar at the apex. The pleural surface is everywhere ragged from the adhesions. The peribronchial lymph nodes are not enlarged. The cut surface of the lung shows hyperaemia, especially in the lower lobe. The upper lobe is grayish in color, somewhat

oedematous, and shows numerous small nodules, many of which are just visible to the naked eye.

The right lung was very firmly adherent in the basal portion and could not be separated except by cutting. The surface is everywhere covered by fibrous threads, and the whole lower lobe is extremely firm and shrunken. The peribronchial lymph nodes are enlarged and one of them shows a small calcified area about the size of a grain of wheat. The cut surface of the upper lobe is purplish in color and is studded with small tubercles similar to those in the left lung. The lower lobe is very dense and fibrotic, and is dark gray in color, with strands of dense, white fibrous tissue running irregularly through it. All resemblance to normal lung tissue is lost. In the central portion is a small cavity with ragged walls, and scattered throughout are many small white tubercle-like nodules.

The spleen is large and wrinkled ($16 \times 10 \times 3\frac{1}{2}$ cm.) and is rather soft. The adrenals are small and dark in color. The kidneys are rather small and smooth, and the capsules strip easily. The surface is purplish in color and the stellate veins are prominent. Scattered irregularly over the surface are small round grayish nodules about 2 mm. in diameter and extending about 2 mm. into the kidney substance. These spots are not caseous. On section the kidney substance is opaque and shows many small grayish areas similar to those on the surface.

The prostate and the bladder are apparently normal. The intestines are injected but show no lesions, and the Peyer's patches are not swollen. The mesenteric lymph nodes are distinctly larger than normal. The stomach shows no lesions.

The liver is small ($25 \times 20 \times 7\frac{1}{2}$) the surface smooth, and the gall bladder apparently normal. There are a few large lymph nodes in the hilus. The cut surface is moist, opaque and brown in color. No tubercles are seen.

The right testicle is apparently normal. The left shows complete obliteration of the sac of the tunica vaginalis, and the whole of the epididymis and fully one-third of the testicular tissue is replaced by a dense white fibrous tissue in which are many small nodules.

The aorta is apparently normal. The oesophagus, thyroid gland and the pharynx show no lesions. The deep cervical lymph nodes are slightly enlarged and some of them are anthracotic.

The larynx shows a number of small shallow ulcers along the margin of the right vocal cord, and when pressure is exerted over the outer surface of the thyroid cartilage, pus exudes through these ulcers into the larynx. No accumulation of pus was found on the outer surface of the thyroid cartilage.

The brain and meninges show no lesions.

Examination of the bones shows marked destruction of the upper end of the tibia and of the patella of the left knee, although the joint is apparently intact. There is marked destruction of the small bones of the right wrist. There is a large subperiosteal abscess over the anterior surface of the sacrum, causing destruction of the sacral vertebrae to a depth of over a centimeter. There are several subperiosteal abscesses on the inner surface of the ribs with deep destruction of the underlying bone. In two of these the erosion has extended completely through the bone, and continuity is established between the subperiosteal and a subcutaneous abscess. The cavity in the lower lobe of the right lung was directly continuous with such a subperiosteal abscess, and, through the erosion in the bone, with a large subcutaneous abscess in the right axilla. There is also deep destruction of the anterior surfaces of the seventh cervical and first and second dorsal vertebrae where a large abscess was found in the deeper tissues of the neck.

Smears taken from the pus from different parts

of the body showed numerous spherical, doubly-contoured bodies with granular protoplasm. All stages of reproduction by budding were seen in the fresh pus, and after the pus had stood in a warm place for a few days, hyphae could be seen growing from the spherical bodies. No tubercle bacilli or other bacteria were found in spite of careful search. Cultures made on the ordinary media showed beginning growth of the characteristic fungus in from four to five days.

Subcutaneous and intraperitoneal injections of guinea pigs, and intravenous injections of rabbits with an emulsion of the pus in normal saline solution, produced no visible lesions.

Microscopic examination of the lungs, skin, testis and deep tissues of the neck showed many small tubercle-like nodules consisting of epithelioid cells and containing multinuclear giant cells of the Langhans type. In many of the nodules and in some of the giant cells the characteristic budding yeast cells were found. No tubercle bacilli were found in any of the lesions. Sections of the epididymis showed areas of necrosis which somewhat resembled caseation, but in the skin and the lungs no caseation was found. Small abscess-like foci were found in the centres of many of the tubercles. There was no involvement of the lymph nodes.

Discussion.

Dr. Dickson: I believe that this case of systemic blastomycosis which has developed in California is of considerable interest in view of the fact that the relatively frequent systemic fungous infections in California have practically all been of the coccidioidal granuloma type. I have seen one other case of blastomycosis in California. The patient who was sent to Dr. Ophils by Dr. Mudd of Merced complained of a large fungoid ulceration on the back of the wrist and hand extending over the thumb. He was a young man who had lived in Illinois, who, six months previously, had acquired a cough with a good deal of blood-stained sputum, and who at that time had had night sweats. No tubercle bacilli had ever been found in the sputum, but he was sent to California for "lung trouble." He rapidly improved after coming West, the lung symptoms disappeared entirely, and he gained rapidly in weight. A few months later he developed the lesions on the hand and wrist, and these proved to be due to blastomycosis. I have since been informed by Dr. Mudd that the patient died a few months after we saw him, and that autopsy showed a widespread involvement of the visceral organs and extreme destruction of the bones of the arm and of the vertebral column. There seems to be little doubt that this was a case of systemic blastomycosis which was acquired in Illinois and which showed temporary improvement after the removal to California.

The fact that the type of reproduction of the infecting organism in both these cases was identical with that described in the cases of blastomycosis in other parts of the country, and that it differed from the type of reproduction found in coccidioidal granuloma, shows that the two diseases are not due to the same infecting organism. Many authors have believed that this is the case, and Hyde has suggested that differences in climatic conditions in California might explain why the reproduction in the Californian oidiomycosis was always by endo-sporulation, while that in blastomycosis was by budding. The occurrence of these two cases of typical blastomycosis in California provides strong evidence in favor of the conclusion that blastomycosis and coccidioidal granuloma, while closely related, are etiologically distinct.

* Read before the Forty-third Annual Meeting of the State Society, April, 1913, but publication delayed because the manuscript was mislaid in the Journal office.

A CASE OF VERONAL POISONING.*

By EDWARD SWIFT, M. D., Los Angeles.

The patient was a woman of 42 years. She had always been in good health, but was of a highly neurotic temperament. At 11 a. m. I was called to see her, though I had seen her the night before when she was apparently in perfect health but somewhat worried over some domestic troubles. I received the telephone call from her brother, who informed me that though his sister had gone to bed the previous night at 10 o'clock, she had as yet shown no evidence of awakening.

On examination I found the patient in coma from which it was impossible to awaken her; no response from pressure over supraorbital nerve. There was no cyanosis; pulse 60 and of good quality; temperature normal; respirations 22. I immediately washed out her stomach with warm water, after which six ounces of black coffee and one egg was administered through the tube. Normal salt was given per rectum by the drop method (two quarts at this time). When I saw her a few hours later she was in the same condition, though her respirations were slightly deeper. About 4 a. m. the following morning she became cyanotic, her breathing, which had gradually been getting deeper, became stertorous, her pulse weak and irregular, being intermittent at times. Her temperature still remained normal. Caffeine sodium benzoate in doses of gr. i and camphor and ether in doses of m. x were given for cardiac stimulation. This treatment only improved the pulse temporarily. Her respirations gradually became more and more stertorous, and by three in the afternoon she developed signs of pulmonary congestion. This gradually increased until there were signs of well marked edema of the lungs.

Her cyanosis gradually increased in spite of oxygen inhalations and hypodermic injections of atropine. Adrenalin was given without benefit. At 4 p. m. her stomach was washed out and the return consisted of brown fluid with a decided fecal odor, and containing some particles of fecal matter. There seemed to be a loss of tone of the intestinal tract, for enemas given were not expelled.

The patient died at 5 p. m. Just before death her temperature gradually increased to 105°, respirations developed into the Cheyne-Stokes type. Her pulse became weaker and weaker until it was imperceptible at the wrist. The function of the kidneys was lessened and in the last twenty-four hours of her life only two ounces of urine were to be obtained by catheter. Altogether she received one gallon of normal salt by the drop method, but this seemed to have no effect upon the secretion of urine. Hot packs and dry cups over the lungs were used, but nothing seemed to be of any avail.

On investigation it was found that she had taken one hundred (100) grains of veronal just prior to retiring for the night.

The following references may be of interest:

Sterling in the Australian Medical Journal, May 17, 1913, reports a case in which one hundred and twenty-five (125) grains were taken with recovery. Patient was found a few hours after taking.

* Read before the Los Angeles County Medical Society, January 15, 1914.

Chitty in the *Lancet* for March 29, 1913, cites a case in which 125 grains were taken with recovery.

Wilcox in the *Lancet* for October 25, 1913, has written a very complete article in which he says that the average minimal fatal dose may be considered as 50 grains; however, he says that death has occurred from doses of 15 grains. He reports ten cases which I cite very briefly:

Case 1. Female, age 27. Death in forty-eight hours; quantity unknown.

Case 2. Female, age 60. Death in eight hours. In this case morphine had been taken as well; quantity of veronal taken undetermined.

Case 3. Male, age 54. Death in two hours; twenty grains were taken, but patient had tabes and it is doubtful if drug caused death.

Case 4. Male, age 37. Death in seventy-eight hours; large dose taken but quantity not determined.

Case 5. Female, age 38. Death in thirteen hours; one hundred and twenty-five grains taken.

Case 6. Male, age 39. Death in eighty hours; quantity unknown.

Case 7. Female, age 42. Death in twenty hours; one hundred to one hundred and twenty-five grains taken.

Case 8. Male, age 56. In this case the patient fell twenty feet, suffered a fracture of the sternum and fracture of four ribs; veronal was given; patient died soon afterwards, and at autopsy edema of the lungs was present. Death probably not due to veronal.

Case 9. Male, age 62; fifty-three grains taken with recovery; patient in coma twenty-four hours.

Case 10. Male, age 28. Death in thirty-two hours; over seventy-five grains taken but exact quantity not known.

The results of postmortem examinations, according to Wilcox, are briefly as follows:

Cyanosis after death. There still may be blueness of fingers, lips and face. Marked dilatation of the heart more pronounced in right auricle and ventricle. The great veins are full of blood which is often fluid. The air passages are congested and contain mucous exudation. The lungs show hypostatic congestion and edema with areas of pneumonic consolidation. There are no characteristic changes in the stomach and intestines. The brain and abdominal viscera show marked congestion. The treatment recommended is briefly:

Wash out the stomach and "if patient is seen after six hours the poison will probably have passed on from the stomach into the intestines." Give coffee, milk and eggs through stomach tube. Give one ounce of castor oil. Cardiac stimulation with strychnine, digitalis, camphor and ether as indicated. Normal salt solution subcutaneously or by rectum. Should be given oxygen as indicated. If the patient shows evidences of remaining in coma, rectal feeding should be resorted to.

BOOK REVIEWS

Modern Medicine. By Sir William Osler, Bart., M. D., F. R. S., and Thomas McCrae, M. D. Vol. I.—Bacterial Diseases—Diseases of Doubtful or Unknown Etiology—Non-Bacterial Fungus Infections—The Mycoses. Publishers, Lea & Febiger, Philadelphia. \$5.00.

Volume I of the second edition of Osler's "Modern Medicine" indicates that the rest of the series will be of unusually high character. This volume is well illustrated and while it contains a number of familiar plates, particularly those of Welch and

Schamburg on Smallpox, nevertheless some new plates of commendable quality have been added. The article of McCrae on Typhoid is excellent and the treatment given is dependable. Poynton's contribution on Rheumatic Fever bringing in the more recent conceptions of this disease and indicating its bacterial nature is not only good but it will be found illuminating to anyone puzzled by the unusual clinical course of many patients. It is rather surprising in a work of this kind to see so little said of the use of the Roentgen-Ray in the diagnosis of tuberculosis with so much space given to the probably valuable but less important method of nitrogen gas injection into the pleural cavity. The chapter on Poliomyelitis is distinctly disappointing, giving a very meager idea of the modern conception of the disease, particularly of its abortive types. The splendid article of Councilman upon Smallpox is as good as can be found anywhere. In general, one can say that judging from the first volume the second edition will present all of the advantages of the first and have in addition, most of the new observations of value that have been presented within the last few years.

R. L. W.

"Meningococcus Meningitis." By Henry Heiman and Samuel Feldstein, with Introduction by Henry Koplik. Published by J. B. Lippincott & Company, Philadelphia and London. Price \$2.50.

A careful summary of our present knowledge of this disease, based mainly upon a thorough study of the bibliography and upon the observation of a series of 75 cases under 13 years of age in the children's wards of Mt. Sinai Hospital, N. Y. Historical sketches precede several of the main divisions of the book. In discussing epidemiology the importance of healthy carriers is made clear and thus many of the odd ways in which this infection spreads are explained. Invasion occurs doubtless via the naso-pharynx. Thence the organism is probably carried to the meninges by the blood. The symptomatology is best described in dealing with children. With adults the clinical picture is less graphic than that in Sophian's recent monograph. The picture of posterior basic meningitis in infants, however, is excellent. In describing lumbar puncture several important points are clearly brought out, as follows: 1. During the puncture and for 15 minutes thereafter the patient should be closely watched by a competent medical assistant. Respiration may stop without warning; if so, artificial respiration should be started at once. 2. Serum should be injected by the gravity method, not by syringe. 3. General anesthesia is contraindicated save when the patient is otherwise uncontrollable. 4. After introduction of serum the buttocks should be elevated and foot of bed raised to facilitate diffusion of serum towards the head. 5. A clear spinal fluid does not rule out meningococcus meningitis. 25% of cases show clear or slightly opalescent fluid during the first 24 hours. 6. "Dry top" should not be reported until a second needle has been inserted in the next space and sterile saline passed in one needle and out the other, proving the needles to be patent and properly placed. Intraventricular puncture has been performed many times with no apparent ill effects, but so far without ultimate benefit.

H. S. F.

Materia Medica, Pharmacology, Therapeutics and Prescription Writing. For Students and Practitioners. By Walter A. Bastedo, Ph. G., M. D., Associate in Pharmacology and Therapeutics at Columbia University. Octavo of 602 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$3.50 net.

Bastedo's treatise is the latest American book

on pharmacology and therefore contains many facts not found in older works. It is written mainly from the clinical point of view and is really applied pharmacology. The applications of pharmacology to therapeutics are conservative and judicial, however there is considerable doubt whether a text-book on pharmacology should be written from the standpoint of practical clinical therapeutics and whether any presentation save from a strictly scientific point of view would encourage students to do independent work in this subject. The author has made numerous attempts to induce students to think logically, but too often statements are given dogmatically.

The chapter on alcohol is a well balanced presentation of the alcohol question and is well worth perusal. Most of the other chapters are unsatisfactory for the students of scientific pharmacology; thus the subject of Epinephrin is poorly presented and through an oversight the amino-group, to which epinephrin owes its activity, is omitted from the formula. One finds no mention of the investigation of Cannon and De La Paz, work which has opened up tremendous possibilities in the pathology of cardio-vascular diseases. The term epinephrin chloride has been used in place of hydrochloride. These terms suggest different chemical conditions. No mention is made of the depressor constituent of the pituitary gland or of the possibility that the activity of the pituitary gland may be due to several constituents. The active constituents of the anthracene purgatives is called emodin, whereas there are a number of emodins. Under anthelmintics there is no mention of the danger of using castor oil after male fern and under calomel no reference is made of the dangers of calomel insufflations when potassium iodide is being used internally. The description of the active principles of digitalis is not up-to-date. Under opium no consideration has been given to the synergistic action of the opium alkaloids and the author even states that the alkaloids of opium, save morphine and codeine have not been isolated. Under ergot, beta-aminazolethylamine or ergamine is not mentioned and the author has used the trade name, tyramine, for paraoxyphenylethylamine, while our Pharmacopeia is endeavoring to discourage such usage. The recent work on lead poisoning by Legge and Goadby has not been considered. Objections can be urged against most of the chapters, no doubt because the author has endeavored to cover too many subjects—Materia Medica, Pharmacology, Therapeutics, Prescription Writing—in a limited space. The general practitioner can read this work with profit because of its attempt to rationalize therapeutics, but the book seems hardly satisfactory as a text-book of pharmacology, at least, for students in advanced medical schools.

A. C.

SOCIETY REPORT

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of January, the following meetings were held:

Medical Section, Tuesday, January 6th, 1914.

1. The Relation of the Employers' Liability Act to the Medical Profession. Will J. French, Industrial Accident Board. Discussed by M. R. Gibbons, Medical Director.

General Meeting, Tuesday, January 13th, 1914.

1. Roentgen Rays and Mesothorium in Gynecologic Practice; Report on their Application at Several German University Clinics. (Personal Observations.) Henry Kreutzmann.

2. Intraspinal Treatment of Syphilitic Disorders of the Central Nervous System (Swift & Ellis). Preliminary Report of Cases. P. K. Brown and W. T. Cummins.

Preliminary Report of Tabetic Cases. S. J. Gardner, W. B. Coffey and W. T. Cummins.

Surgical Section, Tuesday, January 20th, 1914.

1. Demonstrations:

- (a) Case of Osteoarthritis; (b) Case of Acute Arthritis. Harold Brunn.
- (c) Case of Coccidioidal Granuloma. W. I. Terry.
- (d) Case of Spinal Tumor. Howard Naffziger.
- (e) Arteriovenous Suture in a Dog. Sterling Bunnell.
- (f) Case of Strangulated Undescended Testicle (Specimen). H. B. A. Kugeler.

2. Madelung's Deformity, with Case Demonstration. Howard Adler.

3. Intracranial Pressure. Howard Naffziger. Discussed by H. B. A. Kugeler, Kaspar Pischel and O. Tobriner.

Eye, Ear, Nose and Throat Section.

January Meeting: Dr. H. Y. McNaught in the chair.

Two cases were shown by Kaspar Pischel: first, a case of old iritis in which the anterior lens capsule showed whirls of sulci like finger prints; Second, a case of legal importance. The patient claimed that he had always seen well with both eyes, but that the sight of the left eye was destroyed by a piece of steel. The sight in that eye is diminished to counting fingers in the upper field of vision only. The ophthalmoscopic examination does not show any sign of injury but a congenital malformation on the disc.

A case of large marginal corneal ulcer was shown by M. W. Fredrick.

Dr. G. P. Wintermute gave a lantern slide demonstration of the pathology of the ear.

Dr. H. Horn exhibited a healed double Killian and an acute mastoid which had been operated and had not healed. Dr. Horn assumed that the failure to heal was due to tuberculosis.

Dr. H. Y. McNaught exhibited a case of acute labyrinthine degeneration of unknown origin. There was a triple negative Wassermann in a 30-year-old woman and loss of perception for the forks and speech through air and tone coming in suddenly without dizziness. The examination was made two weeks after the original attack and at this time there was an after nystagmus on turning to the right of 35 sec. and on turning to the left of 10 sec. A week following this the after nystagmus was 10 sec. in either direction. The caloric nystagmus was present in either ear, but was sluggish.

Dr. H. B. Graham exhibited a case of tumor of the nose and orbits involving the middle third of the septum, the ethmoids and middle turbinates of both sides, the inner walls of the orbits and the orbital rim of both maxillary bones. There was exophthalmus, circular scotomata, slight papillitis and retinal hemorrhages in both eyes. The tumor was hard and in the nose presented a smooth, pale surface which bled easily. The X-Ray showed no encroachment on the cranial cavity. The diagnosis lay between osteoma, osteosarcoma and endothelioma.

Dr. Graham—Healed Jansen Frontal Sinus and Caldwell-Luc Antrum Case. The patient had been operated in Europe and America a number of times and treated by the usual washings over a period of five years. Dr. Graham removed the inferior wall of the frontal sinus through an external wound and succeeded in removing the whole of the mucous membrane of the sinus and antrum. Since the operation, four months previous, there had been no pus in the nose and but little watery secretion in the first few weeks. The external wound could scarcely be seen.

Dr. Graham—Healed tubercular mastoid and glands of the neck. Case three years of age

operated radically one year previously, Dr. Eaves doing the glands of the neck. At present a slight moisture at the eustachian tube which is not noticed by the mother, patient coming to the clinic once a month. The diagnosis was made clinically and pathologically by guinea pig inoculations and microscopical examination of the tissues of mastoid region and glands.

Dr. Graham—Ozena of the Larynx. Patient Silesian male 30 years of age with characteristic lesions of the nose, pharynx and larynx, the crusts extending well down into the trachea. The patient does not complain of any laryngeal trouble. A marked improvement was observed after a week's treatment with dionin.

Dr. Graham—Acute Shrinking of Perception for High Tones with Recovery. Patient male 40 years, healthy save for a long standing chronic tubotympanic catarrh of both ears. Was observed at three different times over a period of a week to have lost progressively the perception for the tones of the whole monochord and after a few weeks' rest from very exacting business completely recovered. The influence of nerve strain on the auditory apparatus was pointed out to be at times profound.

Dr. Graham—Disturbance of Hearing Due to Interference With the Plexus Tympanicus and Chorda Tympani. Patient, nurse with a calculus in Wharton's duct. The result was an intermittent enlargement of the submaxillary gland; eventual removal of the calculus. At the times of occlusion of the duct there was a feeling as though the ear was filled with water and patient would hear very badly on that side; there was a low-pitched ringing in this ear at these times. As soon as the occlusion was relieved these symptoms would all disappear. On removal of the calculus permanent relief. Dr. Graham pointed out that the submaxillary gland is supplied by the chorda tympani. The plexus tympanicus is connected with the 5th, 7th, 9th, 10th and 1st cervical. The tensor tympani and stapedius are supplied by the 5th and 7th and the rest of this nerve plexus is sensory, supplying the ligaments, articulations and membranes of the middle ear. That remote lesions in the line of these nerves are responsible for a large number of our ear symptoms has often been pointed out and Graham has no doubt that they are often overlooked by the specialist.

Dr. C. F. Welty. Luc-Caldwell operation. Dr. Welty left the inferior turbinate and claimed priority in the operation.

RESOLUTIONS ADOPTED BY LOS ANGELES.

1. RESOLUTIONS IN REGARD TO FEE TABLES OF WORKINGMEN'S COMPENSATION ACT.

Whereas, The State Industrial Commission, in order to carry out the provisions of the recently enacted Workingmen's Compensation Law of California, which is intended to safeguard the economic efficiency and prosperity of citizens engaged in industrial occupations, an object with which the ethical medical profession is in deep sympathy, as is evidenced by the service of its members in the past, in caring for many of the unfortunate sick without cost, in hospitals, dispensaries, and in private practice; and

Whereas, The State Industrial Commission of California, in order to carry out the provisions of the above law, has found it necessary to adopt a definite and fixed medical and surgical fee table in which minimum fees are enumerated, these fees being below those in general vogue among the ethical profession of this State; and

Whereas, The ethical medical profession has itself refrained from the adoption of arbitrary fee

tables because it is difficult to make a fixed charge for services in the treatment of diseases and injuries, where the amount of skill and responsibility both required and given is a constantly varying factor, so that a fixed and arbitrary fee table could do injustice to both patient and physician; now therefore, be it

Resolved, By the Board of Councilors of the Los Angeles County Medical Association (an organization established in 1871, and having more than 600 ethical practitioners of medicine and surgery), that this Board, because of the above and other reasons, respectfully requests the California State Industrial Commission to pass a resolution and print on the fee table they have submitted, a statement to the effect that that Commission understands fully the difficulty and the inequality of an inelastic fee table for medical and surgical services, and that the minimum fees presented by the Commission are so made because of the limited resources of the State Industrial Insurance Fund, and because of the comparatively small financial income of the bulk of citizens whom the Industrial Law is especially intended to protect and benefit; and be it further

Resolved, That it is the opinion of the Board of Councilors that some such resolution or statement of record by the California State Industrial Commission, should be made by that honorable Commission, lest as time goes on, an injustice be done the very profession, which, above all others in the past, has borne the brunt of aiding and helping the unfortunate sick and injured of our commonwealth.

2. RESOLUTIONS REGARDING COMMERCIALIZATION OF MEDICAL AND SURGICAL SERVICES.

Whereas, In the opinion of the Board of Councilors of the Los Angeles County Medical Association, the California Casualty Insurance Board has presented a fee table for medical and surgical services that is not a fair compensation for skilled medical and surgical attention; and

Whereas, The State Industrial Commission has adopted a different fee table, which while not in itself in accord with the average prices for the services to be rendered, is however, permissible for the particular group of patients whom the State Industrial Act is intended to benefit, because the State must adopt a minimum definite fee table to avoid legal and financial complications; and

Whereas, If it is understood that there is no objection by the ethical medical profession to such a minimum fee schedule as that of the State Industrial Commission, if the Commission goes on record as the reasons for a schedule below the averages rightly due for skilled medical and surgical services; now, therefore, be it

Resolved, By the Board of Councilors of the Los Angeles County Medical Association, that this Board does not construe the performance of Medical and surgical services at such fees as unethical, provided that in the fees so received, the physician or surgeon shall receive his pay first hand from the State Industrial Commission, or from a Casualty Insurance Company, without the inter-

vention of an intermediary corporation or association seeking to make profit from commercializing these services of one or more physicians or surgeons, and sub-letting those services to insurance companies or other bodies; and be it further

Resolved, That the Board of Councilors will construe as unethical and as a violation of the Resolutions regarding Contract Practice, any members who sign contracts or perform surgical and medical services for secondary commercial associations intended to give aid to casualty cases, for fees less than those enumerated in the fee table of the Los Angeles County Medical Association, it being the opinion of this Board that such organizations are in essence not one whit different from the so-called "hospital associations"; and be it further

Resolved, That such cases of violation of these rules be construed as violation of the Rules on Contract Practice adopted on March 22, 1912.

MEDICAL CONTRACTING BY WHOLESALE.

The following proposed contract is published without comment and taken in connection with the list of those in the list of the Casualty Underwriters' Association, is sufficiently suggestive:

Agreement for Medical Service, under the Boynton Act, made by George W. Goodale, M. D., to

..... Company.

I, George W. Goodale, M. D., of San Francisco, California, hereby agree to furnish an organized staff of surgeons, located in logical industrial centers, and also a staff of consulting specialists for the purpose of treating medically and/or surgically, in accordance with the Medical Fee Schedule adopted by the Casualty Underwriters' Association of California and appended hereto (excepting the fee rate on X-ray work) any injured person sent to me, and for whose treatment the Company is responsible or interested, and I agree not to incur any further expense without the consent of the said Company.

In any case not covered by this Medical Fee Schedule, I agree that a proportionate reduction of ordinary charges for such service shall be made.

As the above schedule makes no provision for a Dental Surgeon, I agree to draw up a special schedule of fees covering such services, and submit same to the Company for its approval. If approved, such special schedule shall be as binding upon me and my staff as if embodied in the Medical Fee Schedule of the Casualty Underwriters' Association of California.

X-Ray Work.

The fees for X-ray work are to be based on the following classifications:

1. Ordinary office work.
2. Ordinary hospital work.
3. X-ray taken at home, necessitating a portable machine.
4. Unusual cases, necessitating the use of the most powerful machines and the most skilled operators.

I agree to draw up a special schedule for such different classes of work, such schedule upon approval of the Company to be as binding upon me and my staff as if embodied in the Medical Fee Schedule of the Casualty Underwriters' Association of California.

SPECIAL AGREEMENTS.

Emergencies.

In the event that it is impossible for the injured employee in an emergency to obtain prompt attention from my staff of surgeons, I hereby agree, if another surgeon is called, to pay the difference

between the regular fee and the amount charged by such other surgeon. This agreement to apply to first aid treatment only.

Hospitals.

I agree if desired to obtain for the Company hospital rates and to use, after consultation with the Company, the hospitals which for price, efficient service, and locality, appear to be most fitting.

Ambulance Service.

I agree if desired to obtain for the Company ambulance and taxicab rates.

Drug Stores.

I agree to obtain for the Company a special rate of about thirty-five (35) cents a prescription from drug stores selected for quality and location. A special form of prescription blank will be used, sample of which is appended hereto.

Surgical Supplies.

I agree to obtain for the Company, special rates of discount on surgical supplies and apparatus from both surgical supply houses and drug stores.

Reports.

I agree to have printed and use reports of medical aid to injured employees. Copies of reports appended hereto. Or, if desired, will use reports furnished by the Company.

Medical Service Order.

I agree to furnish Medical Service Order Books, sample of which is appended hereto.

Industrial Accident Board.

I agree that all surgical and medical treatment will be such as to meet with the approval of the Industrial Accident Board.

Attitude Toward Employees.

I agree to instruct my staff to show to the injured employees sent to them for treatment the same attention and courtesy as is shown to their private patients.

Medical Advisor.

I agree to act as an advisor to the Company in all matters relating to compensation and the Industrial Accident Board.

Payments.

I agree to file a final report of medical service rendered in each case, this report to serve as a bill on the Company for service rendered.

I agree to maintain the number of offices and surgeons in San Francisco and elsewhere as stated in the "List of Offices and Surgeons" appended hereto. I further agree to add to my list of surgeons, as printed in the Medical Order Book, the name of any surgeon the Company may desire. However, I am not to be held responsible for the payment of his services nor for the character of his work.

THE CASUALTY INSURANCE ADJUSTERS' ASSOCIATION OF CALIFORNIA.

533 Merchants' Exchange Building.

San Francisco, Cal., February 2, 1914.

To Members:

Re: Doctors and Hospitals.

Supplementing my previous circular letters, the following doctors have signed the Medical Fee Schedule, in addition to those already noted:

Frankfort Co., **M. O. Austin**, 16th and Mission Sts., San Francisco.

Royal Co., **P. Campiche**, 381 Bush St., San Francisco.

Frankfort Co., **W. H. Harrison**, 42 Market St., San Francisco.

A. H. McNulty, Phelan Bldg., San Francisco.

Frankfort Co., **W. Peters**, 1402 18th St., San Francisco.

Pac. Coast Cas. Co., **Shelby P. Strange**, 728 Eighth Ave., San Francisco.—(After Feb. 15, 1914, Benicia, Cal.)

Maryland Cas. Co., **Wilhelm Waldeyer**, 350 Post St., San Francisco.

Pac. Coast Cas. Co., **Walter J. M. Williams**, 310 Columbus Ave., San Francisco.

- T. B. Holmes, 1501 23rd Ave., Oakland.
 Mass. Bonding Co., Wm. W. Kergan, 1225 Wash-
 ington St., Oakland.
 Fidelity & Dep. Co., J. H. Sampson, 577 14th St.,
 Oakland.
 Fidelity & Dep. Co., R. T. Sutherland, 1215 E.
 14th St., Oakland.
 Frankfort Co., Robert Hector, 2131 University
 Ave., Berkeley.
 Frankfort Co., F. H. Van Tassell, 2982 Adeline
 St., Berkeley.
 Frankfort Co., J. F. Diddle, 2719 San Pablo Ave.,
 West Berkeley.
 Employers' Co., J. Plandbold, Kennett.
 Royal Co., J. A. Copeland, McFarland.
 Royal Co., Rae Felt (Sequoia Hotel), Eureka.
 Royal Co., Lloyd Bryan, (Sequoia Hotel),
 Eureka.
 Frankfort Co., H. N. Taylor, Maricopa.
 F. & Casualty Co., J. D. Dameron, (Dameron
 Hospital), Stockton.
 F. & Casualty Co., S. F. Priestley, Elks' Build-
 ing, Stockton.
 Employers' Co., Fred W. Watt, Morgan Hill.
 Employers' Co., A. L. Weber, Cucamonga.
 U. S. Cas. Co., J. Walter Key, Taft.
 F. & Deposit Co., F. E. Shaw, 9th and K Sts.,
 Sacramento.
 F. & Deposit Co., Jas. T. Affleck, 203-4 Bryte
 Bldg., Sacramento.
 Frankfort Co., Ralph W. Avery, 339 N. 5th St.,
 Oxnard.
 Frankfort Co., W. E. Cunningham, 607 Macdonald
 Ave., Richmond.
 Royal Co., Fred J. Crease, 1916 Chester Ave.,
 Bakersfield.
 Frankfort Co., Chas. F. Nelson, 732-3 Los Ang.
 Investment Bldg., L. A.
 U. S. Fid. & Guar. Co., Fred H. Nelson, 610-11
 Hibernian Bldg., Los Angeles.
 U. S. Fid. & Guar. Co., Edwin Gillman Goodrich,
 3759 Maple St., Los Angeles.
 U. S. Fid. & Guar. Co., W. Frank Holman, 800
 Los. Ang. Inv. Bldg., Los Angeles.
 Frankfort Co., Roy L. Buffum, 415 Nat. Bk. Bldg.,
 Long Beach.
 Royal Co., Edward N. C. Mann, 810 Timken
 Bldg., San Diego.
 Hellganz, Wistrand, Fisher, Hayes, Wilson, Phil-
 lips, Vella, Ayer, Bower, Vanatta, Coen.
 Frankfort Co., J. G. Harrington, 635 Shotwell
 St., San Francisco.
 Frankfort Co., J. W. Jones, 2131 University St.,
 Berkeley.
 Frankfort Co., J. Edson Kelsey, Acheson Build-
 ing, Berkeley.
 Frankfort Co., F. R. Woolsey, 2244 Dwight Way,
 Berkeley.
 F. & Deposit Co., J. S. Green, 507-8 Security
 Bank Bldg., Oakland.
 F. & Deposit Co., J. Louis Lohse, Dalziel Build-
 ing, Oakland.
 U. S. Cas. Co., W. C. Chidester, 207 Second Ave.,
 San Mateo.
 Mass. Bonding Co., W. A. Phillips, Brookdale.
 Employers' Co., David A. Conrad, 1109 State St.,
 Santa Barbara.
 Employers' Co., F. E. Pagett, Main Street, Wind-
 sor.
 Employers' Co., E. G. Lewis, Escalon.
 F. & Cas. Co., J. H. Adams, Crockett.
 Employers' Co., J. T. Wrenn, Placerville.
 Frankfort Co., S. H. Rantz (Hospital),* Placer-
 ville.
 Frankfort Co., W. A. Reckers, (Hospital),* Plac-
 erville.
 Globe Co., G. L. Lynch, Amador City.
 Globe Co., P. S. Goodman, Main and Randolph
 Sts., Sutter Creek.
 Globe Co., Edwin Eugene Endicott, 21 Stael
 Ave., Jackson.
 Frankfort Co., L. A. Perce, Bixby Hartwell Bldg.,
 Long Beach.
 Frankfort Co., Oran Newton, Bixby Hartwell
 Bldg., Long Beach.
 Fidelity & Cas. Co., E. Ward Couper, 3301 Mis-
 sion St., San Francisco.
 Maryland Cas. Co., Arthur L. Fisher, 126 Stock-
 ton St., San Francisco.
 Frankfort Co., M. B. Mooslin, 1811 Fillmore St.,
 San Francisco.
 Fidelity & Cas. Co., John K. Plincz, 916 Kearny
 St., San Francisco.
 U. S. Fidel. & Guar. Co., Brandley Plymire, 948
 Market St., San Francisco.
 Fidelity & Cas. Co., N. H. Prusch, Pacific Bldg.,
 San Francisco.
 U. S. Fidel. & Guar. Co., Thos. C. Shumate, 86
 Post St., San Francisco.
 Maryland Cas. Co., V. C. Thomas, 830 Market
 St., San Francisco.
 Royal Indemnity Co., C. H. Wilder, E. 14th and
 10th Ave., Oakland.
 New Amsterdam Co., Howard Cameron, 824 J.
 St., Sacramento.
 Royal Indemnity Co., A. F. Higgins, 719½ K St.,
 Sacramento.
 Employers' Co., C. L. Six, Wallace Bldg., Stock-
 ton.
 Employers' Co., Edw. E. Baumeister, 336 Broad-
 way, Chico.
 Employers' Co., Laurence Welti, Behlow Bldg.,
 Napa.
 Employers' Co., H. I. Merritt, 19 N. Central Ave.,
 Campbell.
 Employers' Co., C. E. Read, Redding.
 Employers' Co., R. H. Ashby, 114 Lincoln St.,
 Roseville.
 Fidelity & Cas. Co., Blake Franklin, Jackson.
 Employers' Co., H. R. Chesbro, Gilroy.
 Employers' Co., S. C. Rodgers, 107 E. 3d St.,
 Watsonville.
 Fidelity & Cas. Co., M. J. Gates, 116½ Pacific
 Ave., Santa Cruz.
 Mass. Bonding Co., P. J. Cuneo, Hotel Metropole,
 E. Bakersfield.
 Frankfort Co., Homer Rogers, 1831 Chester Ave.,
 Bakersfield.
 Mass. Bonding Co., Geo. Sabichi, 1620 17th St.,
 Bakersfield.
 Employers' Co., W. J. Blevins, 1st Nat. Bank
 Bldg., Woodland.
 London Guarantee Co., Norman A. Leake, 21807
 Andreo St., Torrence (L. A.).
 Employers' Co., B. Kaufman, 404 D. St., Marys-
 ville.
 Employers' Co., Edward A. Diggins, Antioch.
 Globe Indemnity Co., J. Wallace DeWitt, Antioch.
 Fidelity & Dep. Co., Eugene S. May, 626 Dalziel
 Bldg., Oakland.
 Fidelity & Dep. Co., Austin F. Clarke, Oakland
 Bank of Sav. Bldg., Oakland.
 Fidelity & Dep. Co., A. S. Kelly, 1st Nat. Bank
 Bldg., Oakland.
 Employers' Co., Allen R. Howard, 17-18 Dough-
 erty-Shea Bldg., Santa Rosa.
 Royal Indemnity Co., Jackson Temple, Sec'y. S.
 Rosa Hospital, Santa Rosa.
 Royal Indemnity Co., J. W. Scammell, Pres. S.
 Rosa Hospital, Santa Rosa.
 London Guarantee Co., D. D. Whedon, 208 U. S.
 Grant Bldg., San Diego.
 Employers' Co., B. Caldwell, B. St., Biggs.
 Royal Indemnity Co., Dr. Tapley, Marysville.
 Employers' Co., Ergo W. Majors, 532 15th St.,
 Oakland.
 Mass. Bonding Co., Geo. H. Derrick, Pacific
 Bldg., 16th and Jefferson Sts., Oakland.
 Employers' Co., C. B. Jones, 1021 10th St., Sacra-
 mento.
 Employers' Co., Floyd E. R. Burks, 126 Forsyth
 Bldg., Fresno.
 Employers' Co., Chas. H. Walter, Porter Bldg.,
 San Jose.
 New Amsterdam Co., Wallace E. Parkman, 1st
 Nat. Bank Bldg., San Jose.

Frankfort Co., **P. T. Phillips**, Higher Bldg., Santa Cruz.

Globe Co., **Louis Clive Jacobs**, 1615 Polk St., San Francisco.

Maryland Cas. Co., **T. W. Connolly**, Hearst Bldg., San Francisco.

London Guarantee Co., **A. U. Fuson**, 2580 Mission St., San Francisco.

Frankfort Co., **D. G. Bennett**, 2090 Devisadero St., San Francisco.

Employers' Co., **Roland E. Hartley**, 391 Sutter St., San Francisco.

Frankfort Co., **G. W. Goodale**, 1708 Hyde St., San Francisco.

U. S. Casualty Co., **Albert Cohen**, 146 Grant Ave., San Francisco.

Royal Indemnity Co., **F. W. Ross**, 86 Post St., San Francisco.

Royal Indemnity Co., **Chas. W. Card**, 162 32d Ave., San Francisco.

Royal Indemnity Co., **A. Berg**, 1462 Devisadero St., San Francisco.

New Amsterdam Co., **W. H. Heinzmann**, 146 Grant Ave., San Francisco.

Fidelity & Deposit Co., **John R. Clark**, 86 Post St., San Francisco.

Frankfort Co., **Edgar H. Howell**, 209 Post St., San Francisco.

Fidelity & Deposit Co., **Alex. S. Keenan**, 16th and Mission Sts., San Francisco.

Fidelity & Cas. Co., **Francis F. Knorp**, Butler Bldg., San Francisco.

London Guarantee Co.,

Fidelity & Dep. Co., **L. D. Mead**, 135 Stockton St., San Francisco.

Frankfort, Royal and London Guarantee Cos., **James F. Pressley**, 246 Powell St., San Francisco.

Frankfort Co., **J. A. Simpson**, 638 20th St., San Francisco.

Frankfort Co., **Richard F. Tomlinson**, 126 Stockton St., San Francisco.

Frankfort Co., **W. H. Irwin**, 1st Nat. Bank Bldg., Oakland.

Frankfort Co., **A. F. Maine**, 532 15th St., Oakland.

Mass. Bonding Co., **John Purvis**, 577 14th St., Oakland.

Fidelity & Dep. Co., **Dudley Smith**, 1st Nat. Bank Bldg., Oakland.

Employers' Co., **C. L. and A. S. Abbott**, Bank of Rich. Bldg., Richmond.

Mass. Bonding Co., **A. F. Cowden**, Higher Bldg., Santa Cruz.

New Amsterdam Co., **W. T. Burks**, Land Co. Bldg., Fresno.

Frankfort Co., **Elgar Reed**, 6th and D Sts., Chico.

The San Rafael Sanatorium quotes the following rates:

Mass. Bonding Co.—

\$15.00 per week, ward rate.

5.00 flat rate for use of operating room.

5.00 X-ray plates.

Note:—Above rate does not include surgical dressings.

St. Joseph's Home, Stockton, Cal., quotes the following rates:

Fidelity & Cas. Co.—

\$10.50 per week, including bed, board, linen and attendance in ward.

10.00 operating room—major.

5.00 operating room—minor.

(Not including dressings nor laundry.)

Dameron Hospital, Stockton, Cal., quotes the following rates:

Fidelity & Cas. Co.—

\$14.00 per week, ward services, including bed, board, bath, linen and attendance.

5.00 use of operating room, including major and minor operations.

No charge made for medicines, excepting general tonics or special medicines.

17.50 per week for private rooms.

Dr. F. W. Ross, 86 Post St., San Francisco, Dr. G. W. Goodale, Phelan Bldg. (phone Sutter 2154), San Francisco, make the following charges for X-ray plates:

\$4.00 one plate.

6.00 two plates.

The X-ray machine cannot be used in houses where there is no electricity.

* The Placerville Hospital offers a rate of \$12.50 per week, including general care. Special nurse, regular rate extra.

THE LATE E. L. B. GODFREY, M. D.

A committee of the Los Angeles County Medical Association appointed to draw up resolutions upon the death of Dr. E. L. B. Godfrey, desires to offer the following:

Whereas, by the death of Dr. E. L. B. Godfrey, formerly president of the State Board of Medical Examiners and Assistant Surgeon of New Jersey, but resident of California since 1910, the medical profession in general and that of Los Angeles county in particular has experienced a great loss; therefore, be it

Resolved, That the sincere condolences of his colleagues of the Los Angeles County Medical Association be tendered to his widow and to his relatives, and that a copy of these resolutions be sent to the California State Journal of Medicine for publication.

CHARLES LEWIS ALLEN, M. D.,
Chairman.

NEW MEMBERS.

Ryan, Russell C., San Francisco.

Ely, Leonard W., San Francisco.

Lippman, Caro W., San Francisco.

Dixon, R. E., Hanford, Cal.

Nicholson, J. W., Fresno.

Forrest, R. A., Occidental.

Reeves, Wm. Pollin, Spreckels.

Dufficy, Rafael Gabriel, San Rafael, Cal.

Slabaugh, Warren H., Wilmington, Cal.

Cooke, A. B., Los Angeles.

Kern, A. B., Los Angeles.

Dunsmoor, Robt. M., Los Angeles.

Brandel, Harry M., Los Angeles.

Mabry, Wm. C., Tropico, Calif.

Jacobs, Edw. H., Los Angeles.

Wilson, Jno. C., Los Angeles.

Mackenzie, Wilbur W.

RESIGNED.

Newton, Frances Louise, Woodland, Cal.

DEATHS.

Stratton, Jno. A., Newman, Cal.

Baer, J. S., So. Pasadena.

Healy, Jas.—In addresses unknown (died in San Francisco).

Nott, J. R., Lakeport, Cal.

McGowan, Julia N. Moss, Monterey, Cal.

Lilley, J. F.—In addresses unknown (died in Mexico).

Huntoon, Alonzo F., Los Angeles.

Coyner, Jos. W., La Jolla, Cal.

California State Journal of Medicine.

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PHILIP M. LLS JONES, M. D., Secretary and Editor
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ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - - Butler Building,
State Journal, - - - San Francisco.
Official Register, - - -

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be
Typewritten.

Notify the office promptly of any change of address, in
order that mailing list and addresses in the Register may
be corrected.

VOL. XII APRIL, 1914. No. 4

SPECIAL NOTICES.

Annual Meeting Date.—April 14, 15, 16, 1914.
Place, Potter Hotel, Santa Barbara.

County Secretaries Meeting.—Potter Hotel,
Monday, April 13th, 6:30 P. M.

Hotel Rates.—Have been published for the
last two months; will be found elsewhere
in this issue.

Tuberculosis Session.—Day has been changed
from Thursday to Wednesday and the
entire program will be found included
with the general program.

House of Delegates will meet at 8 P. M.,
Tuesday, April 14th, and thereafter as it
may determine. As business of the great-
est importance is to be transacted, every
delegate should be present when the roll
is called on Tuesday night.

Hotel Rooms.—If you intend going to this
most important meeting and have not
yet reserved a room at the Potter, do so
at once.

Railroad Rates.—The customary rate of one
and one-third fare for the round trip. Pay
the full fare going and be sure to get a re-
ceipt certificate; have the Secretary, Dr.
Jones, sign this at Santa Barbara and
then get your return ticket for one-third
fare.

Time Limit on Tickets.—Tickets will be on
sale for this meeting and will be good
for the going trip from April 4th to April
16th, inclusive. For the return trip, they
will be good from April 14th to April
21st, inclusive. No stopovers allowed on
return trip.

Yale Club Smoker.—We are requested to
announce that the Yale Club of Santa
Barbara will give a smoker to the Yale
men attending the meeting and that
probably the Harvard Club will join them
in this and invite the Harvard graduates.
Full announcement will be posted in the
hotel lobby.

OF UTMOST IMPORTANCE TO YOU.

The coming meeting of the State Society at the Potter Hotel, Santa Barbara, April 14, 15 and 16, will be in many ways the most important session ever held. Problems of the widest range and of the deepest importance of any ever confronting us, will come up for discussion and for action. And we must meet them and settle them in some way; the duty cannot be shirked or put over and a general line of policy must be adopted which can be followed by the Council and the officers in their conduct of the work during the year. Every delegate should attend, even if at some personal sacrifice of time and money on his part, and every county unit should see to it that delegates are elected who will surely attend the meeting and transact the work which will be presented. It is not fair for a county to fail of representation and then kick at what may be done; the time to kick is right there at the meeting of the House of Delegates and possibly the delegate from the smallest unit may have just the right suggestion to make in regard to some pending matter. Certainly he should be there and express his views. This is no time in which to think of personal jealousies or little differences of opinion; changes have come and great changes are coming within the next few years and we must recognize that fact and meet the changes that are here and get ready for those that will be with us before we know it. "Time flies" and a few years pass before one hardly knows that they have come and gone and left their altered problems and relations and conditions behind them. How long it will be before we have state health insurance, just as we now have state accident insurance, one cannot say; but it is certainly coming and whatever plan we determine upon now for the state problem that is already with us will serve as a basis, in all probability, for the working out of the other problem when it, in its turn, comes to us. And it does no good at all merely to complain bitterly of the faults that are to be found in the present law or those which may be seen in what is to be; we are dealing with actual conditions and not with "if's" and "but's" and all that sort of thing; there is no time to waste on that kind of talk; put it out of your head and see if you can think of some better way of dealing with the actual situation which confronts you and all of us. There is every reason to believe that we can work these things out so as to do justice to everybody concerned; but we cannot do it if you just sit back and kick at what is.

OUR ONLY HOPE.

The only hope for holding up the medical profession and medical conditions in this state to-day, is in holding up and increasing the strength of the State Medical Society. As the JOURNAL said two or three years ago, the time will come (it has

almost come now) when membership in the State Society will have to take the place of the official license to practice. A number of physicians have been licensed under this new law who could never in a thousand years have received a license under the old law. No county society should elect anyone to membership without first referring the name to the State Society office for investigation and report; a large number of incompetent physicians are coming into this state and the number is going to steadily increase. If it were not for the organization of the State Society, everything medical in California would be chaos, right now; as it is, we are going to come out of the present confusion with a fairly well defined and satisfactory arrangement. This is no time for fights amongst ourselves; this is just the time when we need to make our organization stronger and more closely knit and stand together solidly, acting as a unit in all matters and moving slowly and with careful and deliberate caution. If we do this, we can do the very most good for the people of our state and for our professional standing in the community.

MEDICAL DEFENSE.

We must recognize the fact and be prepared for it, that the number of suits for alleged malpractice will increase very largely in the near future—in fact is already on the increase. There are a number of reasons why this should be so. More people who are hurt will be treated by physicians; the injured person may not sue the employer and so many unscrupulous lawyers will be deprived of these "contingent fee" cases. There is left only one person who may be sued—the physician; and the same sort of cheap and scaly lawyer who would incite the patient to sue the employer, will turn his attention to starting a suit against the doctor. We do not fear the losing of any of these suits, for if such should be the case in the trial court, the result would undoubtedly be upset on appeal. But the volume of the work will greatly increase and consequently the cost of it. Experience has shown that the State Society defense is very much better than that of any insurance company—and furthermore, the State Society does not try to get out of defending an action by means of some minor technicality; the policy of the Council and its attorney, has been and is, to play the game with honest and fair liberality and they think that is the way the entire membership desires that it be done. No matter whether you are treating a patient for yourself or for some company or for the state, in every case of a fractured bone or where it is possible there may be a fracture, *insist that an X-ray plate be made and be sure that you keep it safely in your possession*; our Society would be four or five thousand dollars richer to-day, if this had been done in every case during the last few years. If the company does not want to go to the expense of an X-ray, tell them to *get some physician who is not a member of the society*, and thus protect yourself and your organization as well.

THE ACCIDENT INSURANCE SITUATION.

Representatives of the State Society, the San Francisco County Society, the State Commission and of several insurance companies have had a number of long conferences during the last month and have come to a better understanding of the case and to a tentative agreement that seems to offer a clearing up, to a great extent, of many of the apparent difficulties. Of course there will be special cases and special problems galore, but they will have to be dealt with as they come along and treated as special cases for adjustment. In general, the plan agreed upon by all is about that outlined as a suggestion in the JOURNAL for February and March. The fundamental principles are about as follows: All signed contracts to do this work in all cases are to be withdrawn or not renewed when they expire. This does away with the objection of having a definitely fixed minimum and maximum fee for a given sort of work regardless of the income of the patient. The fee schedule that will be put out is one which it is understood is to apply to all cases of accidental injury occurring to persons of an earning capacity where such fees would be as high as a physician would ordinarily charge if the patient were to pay the bill himself. In cases where special work is required, mileage, etc., special additional charges will be paid. This does away with another manifest injustice of the original plan. The employer or the company may select a physician to suit itself or the patient, from the membership of the county unit; of course a change of physician may be permitted at any time, in case there is reason to believe that the treatment might be better or for any good reason, just as is the case in private practice. If a dispute arises as to the charges made by a physician being proper or improper, it is to be referred to the County Unit for adjustment; if that does not settle it, to the State Society and if there is still a difference of opinion, to an arbitration committee of three, chosen in the usual way, one by each side and these two choose the third. This protects the companies to a very great extent, for even though a physician might send in a dishonest or exorbitant bill if he thought no one would know it, he will stop and think about doing so if he knows that it is liable to be subjected to the careful scrutiny of all his fellows; no man likes to appear in a bad light before his own kind. Sixty per cent. of the accident cases that will be treated will be very insignificant and the fees allowed will, in the end, average a good deal more than the physicians would receive if there were no such law, for a very large number of minor injuries that would never receive medical attention will now call for the services of a doctor—because the injured person does not have to pay for it! That is just human nature.

A word of caution to our County Medical Societies. Do not pass resolutions of an arbitrary and pugilistic nature; wait until this plan is perfected in its details and the matter can be passed upon by the State Society at the April meeting. We must recognize the fact that the law is here and that, in some form, it is here to stay. It is

very much better for us to work in harmony with the Insurance Commission and with the companies and get things into as good shape as possible, than to fight them or be nasty and say that we won't play because certain things ought not to be so; it is not a question of what *ought* or *ought not* to be, but of what actually *is*, that we have to consider. There is not the slightest doubt but that the plan we are now working on and that will be submitted for discussion and approval at the State meeting at Santa Barbara, will put California physicians in a far better condition than that of our brother physicians in any other state where a similar law is in existence. It has taken a great deal of time and thought and hard work to get these vexatious and badly tangled problems somewhat straightened out, but it can be done and is being done. The companies and the commission have come to see the truth of what we said in the January number—that it is to their own financial advantage to be sure of good medical attention and have some control over the medical situation—and this they can only do by working with the State Society; and we can only secure more liberal and courteous treatment at the hands of the companies by working with them and helping them to the end that all parties to the contract may be absolutely sure of getting fair and honest treatment.

NOTICE!

Forty-Fourth Annual Meeting.

**SANTA BARBARA, HOTEL POTTER,
APRIL 14, 15 AND 16, 1914.**

RAILROAD RATES. The customary railroad rate of one and one-third fare, provided 50 or more are in attendance, will prevail. When you buy your ticket to go to Santa Barbara, pay the full fare and get a receipt-certificate. When you get to Santa Barbara, present this to the Secretary to be signed and then when you get your return ticket, hand this receipt to the agent and he will give you a return ticket for one-third the full fare. Do not fail to get the receipt-certificate or to have it signed by the Secretary, for if you do, you have no redress.

HOTEL RATES. The rates this year are on the European plan and do *not* include meals.

Room, without bath, one person,	\$1.00
Room, without bath, two persons,	1.50
Room with bath, one person,	2.00
Room with bath, two persons,	3.00

Those who desire may be accommodated on the American plan, in which case add \$2.50 per day per person to the above rates.

PRECIPITATE PUBLICATION.

Great patience, circumspection, testing and re-testing of results on a sufficiently numerous series so as to eliminate as much as possible the element of chance, coincidence or other sources of fallacy, denote the trustworthy investigator. A beautiful example of the honest scepticism and rigid self-criticism which the real scientist imposes upon himself when drawing conclusions from complex phenomena is preserved for all time in Darwin's "Origin of Species." In Koch's celebrated rules there is contained an admonition which no inquirer into the etiology of disease should presume to ignore. Wassermann and Noguchi have exhibited exemplary patience, to say nothing of other qualities, before publicly professing anything like certitude as to the value of their researches. And, lest the urgency of our need for therapeutic progress be advanced in extenuation of premature publication of alleged discoveries in this branch of science, the now famous number "606" gives us an arithmetical measure of the labor Ehrlich performed before submitting to the world his remedy for disease.

In contrast to these exemplars of scientific conscientiousness behold MM. Levaditi, A. Marie and de Martel, whose treatment of paretic dementia was recently made known to the public through the daily press. On the first day of December 1913, as we now learn from the "Comptes rendus" of the Société de Biologie of Paris, these gentlemen injected some salvarsanized serum of a rabbit under the dura mater of two patients suffering from that disease. By December 13, less than two weeks after the injections, they hurtled before the Society with the announcement that "beyond all doubt" (*ce qui est hors de doute*) their two patients had been "perceptibly improved" (*sensiblement améliorés*) by this mode of treatment, especially the second, whose general paralysis is less advanced than the first."

Now, one's judgment will be straightway offended at the founding of conclusions upon so small a material where the supply is very abundant and at the haste with which whatever amelioration was observed seems to be ascribed to a specific effect of the treatment in a disease which exhibits a certain variability after the employment of one of a number of different agents and, not uncommonly, a tendency to startling spontaneous remissions. The authors enumerate as "disquieting accidents" of the treatment: intense fever, vomiting, prostration, partial convulsions, catatonia. A permanent beneficial effect would hardly be expected from a method of treatment which causes an organism to suffer so severely; but these gentlemen might at least have reflected that the im-

provement they discerned was possibly analogous to the change observed in the state of some paretic dements after an acute infection attended with fever, a delusive change which led to a trial of tuberculin in this disease. It is, however, not yet worth while to discuss the asserted value of the remedy or its mode of action; for what the "sensible amelioration" achieved by it amounted to is demonstrated in the first patient by the necessity at present (*actuellement*) of taking precautions to prevent him from removing his bandage and by his apparent inability to understand what is said to him (*ne paraît pas comprendre ce qu'on lui dit*); and in the second case, while the patient at present laughs at his former extravagances,—ideas of wealth and persecution in February and March 1913—it is stated that he had received an intraspinal injection of neo-salvarsan in June of 1913 and *before* the present treatment was working and no longer had delusions (*Avant le traitement actuel, le malade travaille et n'a plus de délire*).

Levaditi is an investigator of merit in microbiology and A. Marie is the name of an industrious alienist; but something more than their reputations would be required to inspire confidence in a method applied so briefly and to so scanty material and in conclusions adopted so uncritically and published, we may say, impetuously. No doubt there is as strong a proclivity in certain members of the medical profession as among certain other elements of the population to accept with eagerness importations from Paris. We would admonish these not to "try" the new treatment until they can assure the patient of some substantial benefit in return for such "disquieting accidents" as intense fever, vomiting, prostration, partial convulsions and catatonia.

ECONOMIC WASTE ON A LARGE SCALE.

Some time ago the JOURNAL commented on the great economic waste involved in the maintenance of two medical departments connected with two universities in California. There is no demand for two schools of this class and there can be no justification for their existence, based on anything but personal motives. The amount of money expended in the duplication of effort, totally unnecessarily, is already very great and will be an increasing amount reaching into the millions, as time goes on. Salaries, buildings, hospitals, maintenance expenses, all are doubled and the available material for teaching is halved. Where, in the name of common sense, is the use of it all! All the students in both schools could be handled to better advantage in one school and the saving that would result from consolidation would be enormous not only in dollars and cents but in economy of effort and in perfected teaching. It is rumored that committees have been appointed by both institutions for the purpose of studying the problem and discussing the possibility of amalgamation; it is certainly to be hoped that this may be true and that they may find some way to solve the problem satisfactorily and thus put a stop to this tremendous waste. Undoubtedly there

are many, very many vexatious details that will present themselves, but when a thing is a right thing to do, there is always a way to do it; and this combination, speaking purely from the standpoint of economic saving and bettered work, is certainly a right thing to do. Furthermore, it will have to come eventually, for the trend of present day development is centralization of all educational work in the hands of the state. And this, too, is a sound economic principle, for the citizens of a state are its most valuable asset and their proper training, education and professional equipment is one of the most important tasks of any community. Of course, in the consolidation, many persons' feelings will be hurt; many will be left out; many titles will be taken away; there will be fewer "professors," etc., but that is true of every progressive change, and personal motives of ambition, greed or selfishness should not be permitted to stand in the way of what is to be for the general good of the community and the people.

CLOSING THE HOSPITAL.

Some years ago the JOURNAL commented on the fact that improved medical training and the betterment of medical work as a result of county medical society organizations were having a marked effect in the increase of the small hospital. All over the state, small hospitals were formed in communities that had previously been without any place where a very sick person could be properly treated or operated upon. The local men were studying up their surgery and taking postgraduate work and becoming competent to handle all the average surgical work that came along instead of sending the patient on a long, tiresome and often dangerous journey to a center where there was a hospital and a surgeon to operate. Last year we sent letters to a number of these hospitals that had formerly advertised in the Register and Directory, and several letters like the following were received in reply:

"We have decided to discontinue our hospital owing to the eight-hour law for nurses and therefore will not take the usual advertisement in the Register and Directory."

As a result of this law, which does not seem to do anyone the slightest good and which an overwhelming majority of the student nurses themselves did not want, a number of small hospitals have closed their doors, citizens of the local community are thus deprived of the hospital advantages which they had had, a large number of women are deprived of their occupation and of the chance to be educated so as to go out into the world and earn their living in a truly womanly calling; and what good has resulted to anyone? If someone who knows will only rise up and point out to us the slightest good that has resulted, we will be profoundly thankful. We seem to have gone mad on the subject of making laws for anybody and everybody, whether they want them or not!

GRATEFUL APPRECIATION.

Being an editor or serving on a Publication Committee is generally a pretty thankless task; unless one chooses to be utterly spineless, and whatever the editor of this Journal may be or whatever the members of the Publication Committee may be called, it is certainly *not* that! Here is a letter recently received from a physician in an Eastern city and we publish it with much pleasure, only suppressing the name, from motives of modesty:

"I have just finished reading the February number of the California State Journal of Medicine. I want to compliment you upon the amount of real useful material, editorial, society reports and other, which is published in your journal.

"I have yet to read a copy, and I have been doing so for some eight years, which does not contain something of real interest and value, either to the physician personally or to the association of which he is a member.

"Secretaries of societies throughout the states would profit by reading your journal. It is a real mind jogger."

There is more significance than merely a few kindly words of compliment in this letter and in similar ones that reach the JOURNAL office from time to time. The JOURNAL has always stood for definite, positive things; for real issues; for progress and betterment and upbuilding, and of course, in doing things positive, enemies are always made; that such will be the case is as sure as that the sun will rise and set. But in spite of the knowledge that such would inevitably be the case, every Publication Committee and the editor have stood together for what they thought to be right, even, in one instance, allowing a certain matter to go to an appeal to the Council of the State Society rather than to yield to pressure and publish certain matters which, in their judgment, should not be published. Constructive criticism and suggestions have always been most emphatically welcome; criticism based on glittering generalities has always been rejected because there are too many real important things to be done to waste time on idle speculation or impossible suggestion. If a few more people who feel as the writer of this letter feels, and who sometimes say so verbally, would take the trouble to write it and send it in, it would certainly be a pleasant and a well earned attention in the way of a compliment to the Publication Committee.

**¶ FORTY-FOURTH ANNUAL
MEETING OF THE MEDICAL
SOCIETY, STATE OF CALI-
FORNIA, SANTA BARBARA,
HOTEL POTTER, APRIL 14,
15, 16, 1914.**

PROVISIONAL PROGRAM.**FIRST DAY.****Tuesday, April 14, 1914.****9:30 A. M.**

Addresses and Reports of Committees.

1:30 P. M.**Symposium on the Relation of Joint and Endocardial Affections to Local Infections (3 papers).**

1. The Relation of Local Infections to Joint Affections (15 minutes).
Leonard W. Ely, San Francisco.
2. (Title to be announced) (15 minutes).
C. C. Crane, San Francisco.
Discussion opened by John Carling (Los Angeles).
3. Early Symptomatology of Bacterial Endocarditis (15 minutes).
E. C. Dickson and R. L. Wilbur, S. F.
4. Botulism (15 minutes).
Thomas Williams, Palo Alto.
5. Diagnosis, Significance and Treatment of Bronchial Glands in Infancy and Childhood (15 minutes).
William Palmer Lucas, San Francisco.
6. Leukocytic Extract and the Treatment of Pneumonia (15 minutes).
Harry B. Reynolds, Palo Alto.
Discussion opened by W. H. Manwaring (Palo Alto).

8 P. M. Business Meeting.**SECOND DAY.****Wednesday, April 15, 1914.****9:30 A. M.****California Association for the Study and Prevention of Tuberculosis (all day).****Morning.**
(Medical.)

1. Address of President.
Robert A. Peers, Colfax.
2. Report of Secretary.
George E. Tucker, Riverside.
3. Relation of Bovine to Human Tuberculosis.
T. C. McCleave, Berkeley.
4. The Earliest Manifestations of Tuberculosis and Treatment.
George E. Ebright, San Francisco.
5. Why Are Better Results Not Obtained in the Treatment of Tuberculosis?
F. M. Pottenger, Monrovia.
6. Some Laboratory Aids in the Diagnosis of Tuberculosis.
George H. Evans, San Francisco.
7. The Prognosis of Pulmonary Tuberculosis.
W. R. P. Clark, San Francisco.
8. Treatment of Pulmonary Hemorrhage.
R. S. Cummings, Los Angeles.

Afternoon.

(Sociological and Surgical.)

9. The Bureau of Tuberculosis; Its Work and Plans.
Burt F. Howard, State Bureau of Tuberculosis, Sacramento.
10. Arequipa: An Economic and Sociological Experiment in the Care of Tuberculous Working Girls.
Philip King Brown, San Francisco.

11. Social Insurance as Applied to Tuberculosis.
John N. Force, Berkeley.
12. Tuberculosis—In Relation to Eye and Ear.
George H. Kress, Los Angeles.
13. Tuberculosis of the Genito-Urinary Tract.
R. L. Rigdon, San Francisco.
14. Surgical Stiffening of the Spine in Tuberculosis.
J. T. Watkins, San Francisco.
15. Induced Pneumothorax. (Illustrated by Exhibition of X-Ray Plates.)
Edward von Adelung, Oakland.
16. Business Meeting of the Association—Election of Officers, etc.

GENERAL SESSION.**9:30 A. M.**

1. The Use of the X-Ray and Mesothorium in Gynecological Practice (10 minutes).
Henry Kreutzmann, San Francisco.
2. Management of Three Cases with Relaxed Pelvic Outlet (10 minutes).
Rexwald Brown, Santa Barbara.
3. A Rare Cause of Dystocia (15 minutes).
J. M. Slemmons, San Francisco.
4. Uterine Replacement; with particular attention to the Buteau Operation. (Illustrated with Lantern Slides (15 minutes).
C. A. Dukes, Oakland.
5. The Dangers of Vaginal Examinations During Labor (10 minutes).
Austin Miller, Porterville.
6. Two Unusual Cases of Hernia (10 minutes).
J. J. A. Van Kaathoven, Los Angeles.
7. Shockless Surgery (10 minutes).
A. B. Cooke, Los Angeles.

1:30 P. M.

1. Paroxysmal Hemoglobinuria Treated by Salvarsan with Disappearance of the Characteristic Blood Reaction (15 minutes).
Walter Brem, Los Angeles.
2. Report of a Case of Blastomycosis (10 minutes).
W. W. Roblee, Riverside.
3. The Function of the General Practitioner in Relation to the Study and Prevention of Nervous and Mental Diseases (15 minutes).
Harold Wright, Santa Barbara.
4. Report of a Case of a Child Dying from an Ant Bite (10 minutes).
T. C. Edwards, Salinas.
5. (Title to be announced) (15 minutes).
William E. Tebbe, Weed.
6. Photography in Relation to the Medical Sciences (10 minutes).
H. D'Arcy Power, San Francisco.

8 P. M. Business Meeting.**THIRD DAY.****Thursday, April 16, 1914.****9:30 A. M.****Tuberculosis.**

1. Induced Pneumothorax.
Edward von Adelung, Oakland.
2. The Earliest Manifestations of Tuberculosis and Treatment.
G. E. Ebright, San Francisco.

3. Social Insurance as Applied to Tuberculosis.
John N. Force, Berkeley.
4. Tuberculosis in Relation to the Eye and Ear.
George H. Kress, Los Angeles.
5. Why are Better Results Not Obtained in the Treatment of Tuberculosis?
F. M. Pottenger, Monrovia.
6. Arequipa—An Economic and Sociological Experiment in the Care of Tuberculous Working Girls.
P. K. Brown, San Francisco.
7. Surgical Stiffening of the Spine in Spinal Tuberculosis—Report of Cases.
J. T. Watkins, San Francisco.
8. (Title to be announced).
W. R. P. Clark, San Francisco.
9. (Title to be announced).
George H. Evans, San Francisco.
10. Report of President.
11. Report of Secretary.
12. Report of State Bureau of Tuberculosis.
B. F. Howard, Sacramento.

GENERAL SESSION.

1:30 P. M.

Symposium on Gastroduodenal Ulcer.

1. Symptomatology and Diagnosis (15 minutes).
Emil Schmoll, San Francisco.
2. Roentgen Ray Diagnosis (15 minutes).
Walter Boardman, San Francisco.
3. Medical Treatment (15 minutes).
L. G. Visscher, Los Angeles.
4. What We May Expect From Surgical Treatment of Gastroduodenal Ulcers (15 minutes).
R. C. Coffey, Portland, Ore. (by invitation).
5. Surgical Aspects (15 minutes).
W. W. Richardson, Los Angeles.
6. Duodenal Feeding; Practical Demonstration (15 minutes).
H. G. Watson, Los Angeles.

Following is the provisional program of the Eye, Ear, Nose and Throat Section of the State Society:

Tuesday Afternoon, April 21, 1914.

1. Luc-Caldwell Operation; Indications and Technique.
Geo. W. Caldwell, Oakland, Cal.
2. Cataract Complications.
Vard H. Hulen, San Francisco.
3. Diagnosis and Treatment of Nasal Sinus Disease. Lantern Slide Demonstrations.
John J. Kyle, Los Angeles, Cal.
4. The Surgical Approach in Cases of Nasopharyngeal Fibroma. Lantern Slide Illustrations.
Henry Horn, San Francisco.

Wednesday Morning, April 22.

1. Some Problems in Refraction.
Percival Dolman, San Francisco.
2. Intranasal Operation for Dacryo-stenosis with Case Histories.
L. D. Green, San Francisco.
3. The Influence of the Resection of the Septum on General Disease.
H. Y. McNaught, San Francisco.
4. Report of Two Cases of Thrombosis of the Lateral Sinus.
Cullen F. Welty, San Francisco.

Wednesday Afternoon, April 22.

1. Infantile and Juvenile Tabes.
Hans Barkan, San Francisco.
2. Report of an Unusual Case of Labyrinthine Deafness.
George P. Wintermute, San Francisco.
3. Further Observations on Laryngeal Tuberculosis.
H. Staats Moore, San Francisco.
4. A Case of Necrosis of the Hyoid Bone.
Adolph B. Baer, San Francisco.
5. Asthma in Its Relation to the Specialist.
H. B. Graham, San Francisco.
6. The Consideration of Nasal Conditions Causing Asthma.
W. H. Dudley, Los Angeles.

Thursday Morning, April 23.

1. Operations on Eye Muscles in Heterophorias.
E. W. Alexander, San Francisco.
2. Ocular Arterio-Sclerosis.
Geo. H. Kress, Los Angeles.
3. Meningitis in Its Relation to Otology and Ophthalmology.
W. P. Lucas, University of California, San Francisco.
4. Status Lymphaticus.
John Mackenzie Brown, Los Angeles.
5. The Demonstration of a Case of Anastomosis of the Facial and Hypoglossal Nerves for Facial Paralysis Following Gunshot Wound of Ear, with Recovery.
Cullen Welty, San Francisco.

Urological Section: Advance Program.**Wednesday Afternoon.**

1. Early Hydronephrosis. (Illustrated with Lantern Slides.)
Dr. G. T. Courtenay.
 2. Results of Supra-Pubic Prostatectomy for Hypertrophy of the Prostate.
Dr. M. Molony.
 3. The Seminal Vesicles.
Dr. A. R. Rogers.
- Other papers to be read at this session will be announced later.

Thursday Morning.

1. Hydrocele of the Spermatic Cord and Epididymitis Complicating Prostatectomy.
C. D. Lockwood, Los Angeles.
2. Functional Kidney Tests, Their Diagnostic and Prognostic Value.
Dr. W. B. Dakin.
Discussion opened by Dr. Wm. E. Stevens.
3. Report of Supravescical Abscess with Cystoscopic Findings.
Dr. Ralph Williams.
4. Hematogenous Kidney Infections and Their Treatments.
Dr. Granville MacGowan.
Discussion opened by Dr. H. Moffitt, Dr. H. Ryfkogel, Dr. J. A. Lartigau, Dr. L. Porter.
5. Modern Treatment of Gonorrhea and Its Complications.
Dr. R. L. Rigdon.
Discussion opened by Dr. V. G. Vecki, Dr. E. McConnell, Dr. G. G. Reinle.
6. Hematuria.
Dr. Martin Krotoszyner.
Discussion opened by Dr. H. Meyer, Dr. G. Evans, Dr. Dudley Fulton, Dr. A. Lobingier, Dr. T. C. McCleave.
7. Diagnosis and Treatment of Diseases of the Accessory Glands of the Urethra.
Dr. A. B. Cecil.
Discussion by Dr. J. C. Spencer, Dr. M. Silverberg.

ORIGINAL ARTICLES

TUBERCULOUS GLANDS OF THE NECK;
THEIR RELATION TO DISEASES OF
THE NOSE AND THROAT. THE
RADICAL OPERATION FOR THEIR RE-
MOVAL.*

By BURT S. STEVENS, M. D., San Francisco.

In presenting the subject of "tuberculous glands of the neck," the writer lays no claim to having discovered anything new; in fact, if one peruses the great mass of literature on the subject one will rather early come to the conclusion that about everything that could be said has been said, and this is particularly true in reference to treatment. The ideas advanced are numerous and varied and the more one reads the more one becomes confused as to the best course to pursue in managing these cases.

It seems to me that in connection with no other surgical disease are the views regarding treatment more widely divergent, dependent upon the attitude of the observer and his opportunities and advantages for studying the disease. There is an unanimity of opinion regarding the value of hygienic and dietetic measures, but in the further treatment, all manner of procedures are advocated, the most prominent of which is a prolonged course of "watchful expectancy." Certain therapeutic and minor surgical measures appear to give brilliant results in the hands of one observer, while another obtains little or no benefit from a like treatment and the groups of cases from which conclusions are drawn range in number from one to several hundred. Radical surgery is occasionally advocated but oftener mild measures are first suggested, to be followed by a thorough operation after everything else has been tried and the infection does not clear up.

The purpose of this paper is not to review this literature—it is an attempt to present the salient points of a method of treatment that has given uniformly good results in a fairly large number of cases and it is presented in its relation to diseases of the nose and throat, because of their recognized importance as an avenue through which the glands become involved.

The statements made and conclusions arrived at are based upon observations made in four hundred and seven cases in which the radical operation was performed, a large proportion of which, before presenting themselves to us, having been treated by means other than surgical and a still larger number subjected to one or more local operations, i. e., enucleation of individual glands and evacuation of abscess cavities, with or without the injection of antiseptics.

I wish to express my gratitude to Prof. William E. Schroeder of Northwestern University Medical School for the privilege of referring to his large number of cases and for his generosity in furnishing me clinical material. During the years I was associated with him, I was enabled to observe a wealth of material of this nature

and the technic of the radical operation to be described is practically that of the Schroeder Clinic.

Tuberculosis of lymph glands is a very frequent manifestation of tuberculous infection and in a great majority of the cases, 80-90% (Fischer), the glands affected are the lymph nodes of the neck. The infection occurs within wide age limits—the oldest case in my practice being fifty-one and the youngest two years of age, the latter having resisted all medical and mild surgical procedures and presenting the not uncommon condition of gradual involvement of other glands in the vicinity of those first affected.

Treatment: We all recognize the importance of good hygienic surroundings and nourishing food in the treatment of these patients and realize that nature thus assisted, checks and at times eradicates the disease but, even though we admit that under ideal conditions there is a tendency to heal spontaneously, many of us who have seen a large number of them have observed the long drawn out course of those treated by non-surgical means as well as the unsatisfactory condition of those subjected to incomplete local operating.

The enlarged nodes of the neck, due to other causes, so common in the young, has caused us to wonder if many of the cases clearing up so brilliantly under medical treatment were not other than tuberculous in nature and prompts us to emphasize the importance of removing a suspected gland for histologic examination and guinea pig inoculation—the crucial diagnostic test.

Tuberculin treatment has not been satisfactory in our hands. We administered it to fifty patients before resorting to operation, at the same time suggesting improvement in the surroundings but were unable to note any improvement that could not well be accounted for by the change in environment and more suitable food. In nearly every instance the disease progressed or at any rate did not improve and after a reasonable length of time the radical operation was resorted to.

Keeping in mind the frequency with which the glands become affected through the tonsils and adenoid tissue in the roof of the pharynx, it has been our custom, provided we have seen the cases reasonably early, to remove these structures, correct nasal disturbances, etc., and keep them under observation for a time. Following this, if they do not show marked improvement, we clear the neck. We never wait until glands break down with matting together and formation of abscess cavities and sinuses and in cases where the involvement is marked, or caseation has occurred, we do not wait, but operate at once.

The results of treatment with the X-ray I have observed a number of times and I mention it to condemn it. So far as my observations have gone, the results have been uniformly unsatisfactory. If the patients escape burns and sloughing there occurs a deep formation of connective tissue, matting together of glands and peri-glandular structures, contractures and badly distorted necks; the infection is modified but not removed and the subsequent surgical procedure rendered more difficult and the cosmetic result less satisfactory. I am

* Read before the Forty-third Annual Meeting of the Medical Society, State of California, Oakland, April, 1913.

of the firm belief that the only indication for its use in following operation in patients where there is a persistent skin involvement.

Aspiration of abscesses and injection of antiseptics, together with curettement of sinuses, ordinarily does not effect a cure, unless the process is limited and even then it is better to dissect out the diseased tissues.

On account of the occasional rapid reduction in size of an abscessed gland, individuals are often thought to be improving when, as a matter of fact, the abscess wall has ruptured and the fluid contents disseminated through the tissues of the neck, a large part of which is absorbed, and in this way other glands affected or possibly resulting in a generalized infection.

Surgical Treatment: In 1890 Christian Fenger devised a surgical technic for the radical removal of tuberculous glands of the neck by which a clean dissection is made, removing the glands and gland supporting fascia and respecting certain important structures. Up to that time the enucleation of individual glands was the rule, but it was demonstrated time after time that while this procedure occasionally resulted in a cure, the disease being very limited, there was nearly always involvement of deep glands which could not be palpated, and "so-called" recurrences were the rule. As a matter of fact, at least seventy-five per cent. of the patients presenting themselves at the present time show evidences of previous local operating; cases in which the disease is progressing. These recurrences, so-called, following operations, are not recurrences in any sense—they are necks in which the affected glands were not completely removed—glands left behind in which the process continues. Our object then should be to clear the neck of all tissues affected and this can ordinarily be done with very gratifying results.

Fortunately, the gland involvement lies within quite definite boundary lines, viz: the posterior belly of the omo-hyoid below, posterior belly of the digastric above, anterior border of the trapezius posteriorly and the median line anteriorly; there are occasional exceptions to this rule, but the exceptions in no way interfere with the dissection and complete removal of the affected tissues. One does not attempt to search out individual glands, but avoids certain muscular, vascular and nervous structures, removing the glands and gland supporting fascia by a complete and thorough dissection.

Contra-Indications: The contra-indications to this operation are certainly not numerous, the principal one being a marked pulmonary involvement. In these cases we advise against any radical operative procedure, but in several instances, where both apices were involved and the process not too extensive, we have operated with good results; in fact, under improved hygienic surroundings following the removal of this extra burden, the patients early showed signs of marked improvement.

Abscess and sinus formation have been offered as contra-indications, but this is not in accord with our observations, sixty per cent. of our operative cases having had this condition present and were

the ones which did not respond to other treatment.

As a further contra-indication, involvement of both sides of the neck has been suggested, but to my mind it is a distinctly positive indication for surgical interference; as compared with one-sided involvement the dangers are simply doubled. It has been our practice to operate on one side at a sitting, allowing from three to four weeks to elapse before attacking the other side, and these patients improve as rapidly as do those in which the disease is limited to one side. Schroeder tells me that on three occasions he has performed the double operation, but that he has abandoned the practice—the shock is too great. Age is no contra-indication, although in the very young one would naturally resort to hygienic and dietetic measures for a time, hoping that the condition might improve, or at least that time could be gained.

As in other operative procedures, one aims to have the patient's general condition as favorable as possible and one would be justified, providing there was reason to think something could be gained in this direction, in waiting a reasonable length of time and attempting to build up the individual's resistance.

Technic: A description of the procedure briefly stated is as follows:

The usual general preparation is followed out and the patient's neck, shoulder and an area above and back of the ear shaved. The field having been cleansed, the patient is anesthetized—ether being the anesthetic of choice—a sand bag or air cushion placed beneath the shoulders and the head allowed to swing freely. The head is now flexed and rotated to the opposite side, the anesthetist supporting and maintaining this position, the importance of which cannot be overestimated as it keeps the structures on the stretch, and allows of a much better exposition of the field.

A posteriorly convex incision is now made, extending from a point behind the tip of the mastoid process, along the hairy border and anterior border of the trapezius muscle, crossing the clavicular head of the sterno-cleido-mastoid muscle, to a point one inch below the sterno-clavicular articulation on the same side. The incision first extends through skin, superficial fascia and platysma muscle, and exposes the external jugular vein, which is cut between artery forceps and the ends ligated. Anterior and posterior flaps are now dissected, the upper portion of the external jugular vein remaining attached to the anterior flap, these flaps retracted, and the whole posterior border of the sterno-cleido-mastoid as well as the anterior border of the trapezius muscle exposed.

Our next step is to locate the spinal accessory nerve, as it emerges from beneath the sterno-cleido-mastoid muscle, passing downward and backward in the posterior triangle, to reach the trapezius. The nerve usually leaves the muscle at a point from three-fourths to one inch above the superficial cervical plexus, and may be located by pinching the tissues with anatomical forceps. When the nerve is pinched, a contraction of the trapezius muscle with elevation of the shoulder is observed.

This nerve is now freed and a temporary ligature looped about it to be used as a retractor. The preservation of the nerve often adds to the difficulty and time consumed in the operation, but it is worth while, as we thus avoid a drooping of the shoulder.

No attention is paid to the superficial sensory cervical nerves, they are entirely sensory, and, following their division, the patient notes only a loss of sensation in the area—a not altogether unpleasant condition. If an attempt is made to dissect and free them, it adds much to the length of the operation, and besides they may later become involved in scar tissue, causing much pain. The loss of sensation caused by their division usually returns in from six to eight weeks.

The sterno-cleido-mastoid muscle is now freed along its posterior border and retracted forward, exposing the internal jugular vein, which is to be seen filling and emptying with each respiration, unless the vein happens to be collapsed, which condition is rather frequent and due to the pressure of a gland mass above. The carotid vessels are also exposed but not extensively. At this stage Fenger and Schroeder originally placed a provisional ligature around the internal jugular in its lower portion, fearing injury to the vein and air embolism and also to prevent the respiratory wave which is at times annoying. If irreparable injury to the vein occurred, the provisional ligature became a permanent one, the vein ligated above and the intervening section removed. This precaution has been abandoned of late years, as no untoward effects have been noted following the aspiration of a small amount of air and if the vein is injured it is nearly always repaired and preserved. Ligating both the internal and external jugular veins on the one side has never produced unfavorable symptoms, however, and one need not hesitate to tie off and remove a section of the internal jugular if it has been injured and cannot be satisfactorily repaired.

We next locate the posterior belly of the omohyoid and the removal of the glands begun, working from below upward. When possible this is accomplished by blunt dissection, but frequently, on account of a periaidenitis, one has to resort to the knife or scissors. A sharp hook retractor is placed beneath the border of the sterno-cleido-mastoid posteriorly and the muscle retracted and rotated forward, thus freely exposing the internal jugular and glands lying along and possibly attached to, its wall. These glands may be found on top of or beneath the vein and at times completely surround it, rendering their removal difficult and tedious on account of bleeding resulting from injury to the vein or its branches. The phrenic nerve lying on the scalenus anticus muscle, is to be seen shining through the deep fascia and is carefully preserved. The spinal accessory nerve is retracted, care being taken to avoid too great traction on the temporary ligature, and the dissection carried to the apex of the posterior triangle, all affected tissues down to the fascia covering the deep muscle being removed. The sterno-cleido-mastoid is forcibly retracted forward in its upper portion and the search beneath it continued up as

far as the posterior belly of the digastric muscle, above which affected glands are rarely found. We next remove the tuberculous glands which lie on, or are buried in, parotid gland tissue, below or posterior to the ear, and it sometimes becomes necessary to remove portions of parotid tissue. It is here that we are likely to injure fibers of the facial nerve, to avoid which we dissect parallel to its fibers and carry out a blunt dissection when possible.

Before leaving the post-sterno-cleido-mastoid region, the pocket beneath the trapezius muscle and the supra-clavicular fossa are inspected and involved glands removed. In the latter region one must keep in mind the subclavian vessels, nerves of the brachial plexus and cervical reflection of the pleura and avoid injury as far as possible.

The sterno-cleido-mastoid is now freed along its anterior border and the muscle liberated from origin to insertion in order to give a complete exposition of the deep recesses. Between the sternal and clavicular heads, the muscle fibers are separated longitudinally for a short distance, exposing the omohyoid, immediately beneath which is the internal jugular vein. This again gives us our lower landmark, and, having retracted the sterno-cleido-mastoid backward, we commence our dissection anteriorly, following along the deep vessels up to the posterior belly of the digastric. We may at this time attack the parotid region if dissection from behind was difficult or incomplete, following which, we go towards the median line, removing involved glands lying within the submaxillary salivary, or in the submental region between the anterior bellies of the digastric muscle.

In order to better expose the field and successfully carry out the dissection in the extreme upper parotid region, it may become necessary to sever transversely, one-fourth to one-half of the sterno-cleido-mastoid fibers attached to the mastoid process, repairing with one or two mattress sutures at the close of the operation. We have never found it necessary to divide the muscle completely, neither has it been necessary to resort to additional skin incisions where the submental glands were involved.

A word regarding the handling of abscesses and intact gland capsules containing caseous material—when possible, they are dissected out without rupturing, but if this occurs, the field is protected, purulent or caseous contents evacuated, the cavities packed with gauze and the mass dissected out.

The treatment of existing sinuses also requires consideration—if they are located in the line of our incision they are encircled and removed, the elasticity overcoming the tissue loss; if anterior to our incision, it is best to excise the skin defect by an elliptical incision, going sufficiently wide to obtain healthy skin, and close with a fine suture; if located in the lower portion of the field, we excise but do not close, utilizing the opening for drainage purposes.

Our dissection completed, we go over the ground thoroughly to avoid the possibility of allowing affected glands to escape; bleeding vessels are caught and ligated with fine catgut and the whole operative field thoroughly swabbed with tincture of

iodine or irrigated with sterile water, dried, and a solution of iodoform in ether dashed over it. The head is rotated to the median line and the closure of the wound begun.

We ordinarily use interrupted silkworm-gut in closing, but the Michael skinclips, horsehair, continuous silkworm-gut or subcutaneous catgut may be employed.

Owing to the extensive surface denuded and numerous vessels severed, there is always a considerable amount of bloody serum formed during the first thirty-six hours, consequently drainage is provided. One may drain at the lower end of the original wound, passing a small rubber tube between the separated heads of the sterno-cleido-mastoid muscle, or, as we frequently do, establish an independent drainage wound in the supra-clavicular fossa, closing the original operative wound completely.

Results. In considering the results of treatment, I have confined myself to those cases in which an absolute diagnosis was made and no reference is made to a number of cases treated expectantly, in which we were unable to demonstrate a tuberculous lesion. Many cases of cervical adenitis are subjected to a "snap diagnosis" of tuberculosis, when as a matter of fact, the trouble is caused by other organisms, and this type of case, without doubt, frequently adorns the literature included in reports of cures following removal of tonsils and adenoids or the administration of tuberculins and other medicinal substances.

Of the four hundred and seven individuals subjected to the radical operation, seventy-five per cent. only could be traced, but the figures given are probably a fair index of the whole, inasmuch as they were in no way selected.

There were seven per cent. recurrences, so-called, undoubtedly due largely to incomplete removal of the affected structures inasmuch as they occurred mostly in cases operated early in practice and in localities where one is at first somewhat timid, viz., in the region of the parotid and submaxillary salivary glands and beneath the clavicle.

The immediate mortality, covering the first one and one-half years following operation, has been about two per cent., the causes of death being as follows:

Case I. Operated at Cook County Hospital, Chicago. The patient had been subjected to several previous operations and the neck was a mass of scar tissue. The thoracic duct was injured and ligated in the neck; the patient went into a rapid decline and died of inanition.

Case II. Died two weeks following operation—general miliary tuberculosis.

Case III. Pulmonary tuberculosis, at the end of the first year.

Case IV. Pulmonary tuberculosis, one and one-half years following operation.

Case V. Generalized streptococcus infection, four weeks later.

Case VI. In the first post-operative week—lobar pneumonia.

Case VII. Died on operating table, due to a crushing injury to the pneumogastric nerve.

Case VIII. Died on operating table from shock. Mistaken diagnosis in an emaciated girl, ten years of age. Section showed the growth to be an endo-thelioma.

Case IX. Gland removed for diagnostic purposes—died five weeks later from tuberculous meningitis.

Conclusions. I.—Following attention to the nose and throat and the ruling out of skin lesions in the areas from which the cervical glands receive drainage, individuals presenting a cervical adenitis which shows no early signs of clearing up, should have a gland removed under local anesthesia and be given the benefit of a microscopic diagnosis.

II.—When a diagnosis of tuberculosis has been established, young individuals especially should have the advantage of good hygienic surroundings and proper food when possible and kept under observation for a time, but one should not wait until the glands break down with the formation of abscesses and establishment of fistulae, before resorting to a thorough operation.

III.—The repeated operation of enucleating individual glands, as well as aspirating and injecting cavities, not only disfigures the neck, but allows the disease to progress in recently involved glands, particularly the deep ones which we are unable to palpate. There is also the danger of penetrating a large blood vessel and forcing infectious material into the circulation.

IV.—The X-ray has no place in the treatment of this condition unless it be in the very rare cases with a persistent tuberculosis of the skin, following operation.

V.—The line of incision suggested permits of access to all recesses necessary and the scar, following the hairy border, covered in the upper portion by the hair and in the lower by the clothing, shows but little and is not as unsightly as one placed further forward.

VI.—The non-surgical treatment means a prolonged treatment, extending over months or years, during which time a local trauma or generally lowered resistance may cause sudden activity with great destruction of tissue and widespread infection.

VII.—This type of tuberculous infection is rendered particularly favorable, owing to the fact that it can ordinarily be completely removed, and at the present time the radical operation is by far the best method of treatment we have to offer the patient.

THE PSYCHOLOGICAL STUDY OF MENTALLY DEFECTIVE AND OTHERWISE EXCEPTIONAL CHILDREN.

By ERNEST BRYANT HOAG, M. D., Los Angeles.

In ancient times the feeble-minded, like the insane, were objects of derision, cruelty and persecution and were often summarily disposed of.

At a later period, especially during the Middle Ages, these unfortunates were treated with less severity and became in many instances the "fools and jesters of the royal courts." By some, these idiots and imbeciles were regarded with superstitious respect and it is said that the great astronomer Tycho Brahe, listened with reverence to the mean-

ingless chatter of a fool who had become a constant companion in his observatory.

In this incident we are reminded of the fact that the German psychologist Freud, who is just now occupying the center of the psychological stage, would have us believe that the ravings of the maniac are all of significance if we could but read aright the workings of his disordered sub-conscious mind, and we can not but wonder whether Tycho Brahe and Freud are not entitled to about the same amount of respect in this particular connection.

In the period of the Renaissance the public attitude toward the fool again became one of cruelty and derision. The scientific study of mental defectiveness traces its indirect origin in the early writings of Rousseau, and Pestolozzi and Froebel who became the founders of modern child study. Somewhat later the early fathers of physical education, especially Basedow in 1774, Salzmann, in 1784, and Peter Ling in 1776, still further developed the scientific study of childhood. All of this early work, dating back particularly to the influence of Rousseau, led naturally but very slowly from the study of the normal to that of the sub-normal child.

About the year 1800 a wild boy was discovered in the woods of Aveyron in France and brought to Dr. Itard, Physician to the School for Deaf Mutes at Paris. In 1801 Dr. Itard published some accounts of his study of this boy's intellect, in which he attempted to discuss whether ideas are innate, or only abstracts from experience. This was probably the first scientific study ever made of a defective intellect.

Edward Seguin, another French physician, became so greatly impressed with Itard's studies that in 1837 he "founded a school in Paris for the education of idiots, the first school founded for this purpose in all the world."

The scientific study of the mentally deficient child dates then from a period only a little over seventy-five years ago.

In 1834 as we have seen, Seguin began the study of a few idiot children, and this work he afterwards developed on a large scale in the Bicêtre Hospital, in Paris. At about the same time that Seguin began his serious study and training of defectives in Bicêtre, Dr. Salgert in Berlin and Dr. Guggenbuhl in Switzerland undertook a somewhat similar line of study.

In England the serious study of feeble-mindedness seems to date from about 1843, and in 1848 Park House, Highgate, first undertook the treatment and training of the defective.

In America the first school for defectives was opened in 1848, when the Legislature of Massachusetts appropriated a small sum for this specific purpose.

Soon after the establishment of this school Dr. H. B. Wilbur opened a private school for similar purposes in Barre, Mass. State schools were established in New York (1851), in Pennsylvania (1853), in Ohio (1854), in Connecticut, Kentucky and Illinois between 1855 and 1865.

After 1865 the increase in state schools for de-

fectives was rather rapid and in 1908 there were thirty-one such institutions, accommodating something over 18,000 cases. From a cursory survey of the early history of the study and training of defectives, we may now pass to a consideration of some of the most recent developments in connection with the study of this class of sub-normals.

A mental diagnosis is at the same time a *prognosis*. Every physician of much experience is occasionally called upon by anxious parents to express opinions concerning the mental state of certain children, and upon such opinions is often based the entire future training of the child.

Until recently neither psychologists nor physicians have had any very definite means for estimating the mental capacity of either children or adults, and a diagnosis was therefore usually inaccurate and often misleading.

Various classifications of the mentally deficient have long been in use, but these have never given much evidence concerning intellectual potentiality, and have therefore been of relatively little value in establishing a prognosis. Since 1905, however, when Binet and Simon, two French psychologists, published their first intelligence scale, means have been at hand for the successful classification of mental capacity, and there is at present therefore no longer any excuse for failure to do so. The physician who is to-day ignorant of these relatively simple psychological tests is in much the same position as one who is unacquainted with the Wassermann reaction or of anti-typhoid vaccination.

Every progressive physician should at least know that such tests are available and in what kinds of cases they are likely to prove of value. The mental measuring scale with which this paper deals has come to be familiarly known as the Binet test or scale. In 1908 Binet revised his tests, and in 1911, a short time before his death, he still further improved them.

Since 1911 other psychologists in various parts of the world, but particularly in America, have offered suggestions based upon careful experimentation for increasing the accuracy of the tests, and among these experimenters some of the most important changes have been introduced by Dr. Goddard of Vineland, N. J.; Dr. Kuhlman of Faribault, Minn.; Dr. Huey of Johns Hopkins, and Dr. Terman of Stanford University. Dr. Terman has remarked that "it is something of a mystery why the scale method in the application of mental tests should not have come into general use long ago. For twenty years numerous experimenters applied tests covering almost every type of mental function, and certain correlations were crudely attempted and interesting suggestions were made, but all will admit that for the most part these tests were fruitless. . . ."

Then came Binet with his simple device of arranging the tests in series or groups according to their difficulty as determined by age differences in performance. His data were of very limited extent and rather carelessly elaborated, but the advantages of this procedure are every day becoming more apparent and are rapidly making possible a *clinical child study*.

At the same time it must be admitted that the scale is far from accurate and that it is improvable at many points.

Before explaining in some detail the nature and application of the Binet scale for measuring intelligence, it may be of some interest to consider some of the older common classifications of mental deficiencies. First of all, there has been in the past no general agreement as to the meaning of terms as applied to mental deficiency. Idiot, imbecile, feeble-minded, fool, have all been used as almost synonymous terms. Other common terms used in the general classification of so-called imbecility are those of Ireland, viz.:

Mongolian; Microcephalic; Cretin; Hydrocephalic; Spastic. All of these types belong in the developmental group of mental deficiency.

Among the acquired types we find the following: Eclamptic; Epileptic; Inflammatory; Syphilitic; Amaurotic; Traumatic; Hypertrophic. These various expressions are mainly of use merely for purposes of clinical grouping, and even in this respect are ill-defined and somewhat misleading.

As Dr. Still remarks, "To classify an imbecile as a microcephalic is merely to describe the appearance of the patient; it tells us nothing of etiology or pathology, for there are many different causes which may lead to this arrest in growth of the brain and even the gross changes are by no means always the same in the brain of the microcephalic *idiot*. In some cases the arrest of development affects the whole brain uniformly, in other cases the arrest seems to affect only certain parts. Sometimes in spite of the small size of the head, hydrocephalus has been found in the microcephalic brain."

What is needed therefore are some terms which express definitely the mental status of an individual aside from either the pathology or etiology of the case.

This is what Binet has succeeded in accomplishing, and his classification expresses mental capacity fairly definitely in terms of the normal individual of a given age.

For example, a *Cretin* may, as in the instance of one I recently examined, have an actual age of 45 years, while the mental or intellectual age is only that of a normal three-year-old child. Or we may discover a 16-year-old school boy of normal general appearance who is retarded several years in school, and whose mentality is only that of a fairly normal boy of eight years.

Binet therefore measures mental deficiency on the one hand or precocity on the other, in terms of normality. An individual whose mental age does not exceed two years is an *Idiot*; one whose mental age does not exceed seven is an *Imbecile*; one whose mental age does not exceed twelve years is *Feeble-minded*, or is what Goddard calls a *Moron*. A precocious child of five years on the other hand may have a mental age as indicated by the Binet tests, of seven years.

PURPOSES OF THE TEST.

The Binet tests furnish not only a practical diagnosis but coincidentally give a reasonably exact

prognosis. What we most wish to know about a given case of mental deficiency is, first, to what degree is deficiency present; second, how much further development may be expected; third, what sort of education, if any, will the child profit from; fourth, is the case one for custodial care or will it be possible for the child to take his place in the world as a more or less independent citizen; fifth, has the child any criminal tendencies; sixth, are there any other abnormal tendencies which might make the child a menace in society.

The Binet scale offers much information on these points. It does not always give exact results, it is true, but it does furnish data from which we may draw more satisfactory conclusions than from any other method ever developed in the field of psychology.

Many a *Moron* is at present unrecognized as such. In school he is perhaps regarded merely as rather dull or exceptional in certain traits; in life he is a failure in nearly everything he undertakes, although the real cause is frequently unrecognized.

Such a child passes out into life with the physical strength and many of the natural instincts of an adult normal individual, but with few or none of the normal powers of inhibition. He or she therefore easily falls a victim to criminality, prostitution, illegitimacy, pauperism, alcoholism, morphinism, or some other of the various manifestations of degeneracy. He is quite incapable of successful competition in the world and so almost invariably fails of success in what he attempts. Our juvenile courts furnish at least 25% of mental defectives; our penitentiaries appear to furnish nearly 50%, and the vagabonds, paupers, prostitutes and riff-raff of life in general add their quota to the *Moron* and other defective types of mentality.

NATURE OF THE TESTS.

The original Binet tests consist of a series of questions and directions based upon a study of a large number of normal children from three to thirteen years of age. More recent developments of the system have extended the scale down to infants of one year and upwards to young adults of fifteen.

These questions and directions are not haphazard but were first thoroughly tested out on a large number of normal French children and later applied to large numbers of English and American children. In the main the results with the tests as used by various psychologists in different parts of the world are remarkably uniform. It cannot be said therefore that the tests are any longer in the experimental stage, except in matters of some details which do not greatly affect general results.

An average normal child of three years will point to his nose, eyes, mouth, ears, when asked to do so. He will repeat two numerals; will enumerate the principal objects in a picture; will give his name; will repeat a simple sentence of five words.

At five years, an average child will copy a square correctly; will repeat a sentence of eight

or ten words; will successfully compare the weights of two objects of equal size but varying nine grams in weight; he will count at least four familiar objects, such as pennies, correctly; he will put together a card which has been cut into two triangles, so as to form an oblong card like one placed uncut before him.

A child of six knows whether it is morning or afternoon; he will define a fork, table, chair, house, in terms of *use*; he will copy a diamond figure when placed before him; he will count thirteen familiar objects, such as marbles; he will recognize the difference between pretty and ugly faces in a picture given him to test his esthetic sense.

At eight years of age a normal child will state a difference between paper and cloth, wood and glass, and other perfectly familiar objects; he will count backwards from twenty to zero; he will recognize that certain features are omitted in a mutilated picture of a face or form, such as the eye in one picture, the nose in another, the mouth in another, the arms in another; he will repeat five numerals; will repeat the days of the week and tell what day it is when he is being examined.

At ten years the normal child will successfully arrange in order five weights of the same size (usually small cubes), but weighing 3, 6, 9, 12, 15 grams, respectively; he will copy two rather difficult figures from memory; he will recognize absurdities in a silly story; he will put three given words in a sentence of his own making; he will reason about incidents related to him; for example, what would you do if you broke something which did not belong to you? He will arrange the parts of a simple puzzle picture correctly, or will fit pieces such as triangles, squares, circles, crosses, etc., into their proper places in a form-board.

A normal child of twelve years will repeat seven numerals; tell what words rhyme with others, such as dog, tree, book, etc.; he will repeat a sentence of twenty-four syllables; he will complete the meaning of an incomplete sentence of diverse facts; he will resist suggestions in respect to length of lines placed before him and correctly estimate length of lines in relation to each other.

At fifteen the child will distinguish the meaning between abstract terms, such as laziness and idleness, happiness and honor, poverty and misery, pride and pretension; he will summarize from memory a rather long passage after it has been read to him; he will tell the time without looking at the watch when he is told that it is 2:45 and the hands must be interchanged.

These are a few of the many tests included in the Binet scale and in its revisions by various psychologists.

In estimating a child's age he is given the age for which he passes all the tests, and to this are added one-fifth year for each additional test passed in a higher age period.

Failure in several tests are of very little consequence because of the number of tests given. The intention of the tests is to estimate intelligence

and judgment, and therefore education is supposed to have little to do with the matter. As a matter of fact the tests are arranged primarily for school children, and education and information do enter somewhat into them, but in the end these undesirable features will no doubt be eliminated.

APPLICATION OF THE TESTS.

The Binet scale although originating in France has been considerably modified by a number of psychologists in different parts of the world. In practical use it has been employed not only by clinical psychologists but by a good many teachers and physicians. In the hands of certain intelligent teachers it has served to help in the solution of many of the problems of school retardation; in the hands of certain medical men it has served to aid in the diagnosis of many cases of mental peculiarity which would otherwise have been left either undiagnosed or very imperfectly diagnosed. In the study of juvenile delinquency, especially in connection with juvenile courts, it has solved many problems which would otherwise have remained little understood, if understood at all.

The army and navy have made a beginning in the use of the tests as a means of estimating the intelligence and judgment of enlisting men.

Certain penal institutions, notably Jeffersonville, Ill., and St. Cloud, Minn., have used the tests to estimate the amount of mental deficiency present among their inmates.

Chicago has to-day the best Psychopathic Clinic in the world in connection with a Juvenile Court. This is under the able management of Dr. Wm. H. Healy, a medico-psychologist.

It has been suggested by Dr. Huey that the tests may be profitably used by the employers of men occupying responsible positions where emergencies may at any time be encountered, and that in this way, the time re-action, judgment, general intelligence and mental stability of men entrusted with important work involving the lives of others may be estimated.

In the Pediatric Clinic at Stanford University, the tests are being used in connection with the physical examination of children who come from the Associated Charities, to the end that defective or otherwise mentally peculiar children may be recognized and therefore intelligently understood and properly cared for.

The tests are also used in this clinic whenever any of the routine cases of the general clinic suggest the desirability for a careful mental examination. Advice to parents in respect to education or training is in this way often possible to a degree of exactness, otherwise quite impossible.

In public and private institutions for defectives it is rapidly coming into use as a routine procedure in the classifications of degrees of defectiveness, and to-day the school for defectives which has no provision for a laboratory of clinical psychology does not deserve the full respect of the public. In the public schools, laboratories for child study or departments of clinical psychology are becoming rather common and in all of them the Binet

scale holds an important place in the daily routine of child study.

No other methods have ever served to so successfully classify the mental capacities of school children. The exceptional school child may now hope to be intelligently understood, and therefore properly trained. The precocious school child may hope to receive the attention he has so long deserved. In a word, the defective, the dull, the misfit, the precocious, may now be properly classified and the school program fitted to his particular needs, a procedure which will go far toward placing our public schools on a rational educational basis, which no one who knows schools has much reason to believe has as yet been done.

New York City, Grand Rapids, Mich., Hibbing, Minn., Los Angeles, Long Beach, Chicago, Cleveland, Seattle, and Minneapolis are among the cities maintaining laboratories of clinical psychology in connection with their public schools.

The intelligence tests should be used not only to grade degrees of deficiency but also degrees of superiority or precosity. Of the exceptionally bright pupils we recognize both pathological and normal cases. As Dr. Groszman has well said, "The latter class exhibits merely a more rapid rhythm in the rate of physical and mental development, and the children belonging to this class are otherwise perfectly balanced and sound. As long as the equilibrium of mental and physical growth is maintained, children of this type can be safely allowed to go on in school training, after their own individual fashion and rate."

The Binet tests therefore serve to classify both the bright and defective school children, and from the data secured logical methods of instruction may be put into effect, which do full justice to both of these types, as well as to the average child.

Our school system at present is arranged for some of the children of some of the people instead of for all of the children of all of the people, but the Binet scale ought to go far toward bringing about the proper classification and school adjustment of all of the school children.

A word of caution is needed to guard the inexperienced against supposing: 1st, that the Binet scale is a perfectly reliable method for estimating intelligence in terms of age levels, and 2nd, that it can be used to the exclusion of common sense methods of observation or of other well known psychological methods. The trained psychologist will use the Binet scale merely as an aid to many other methods of testing intelligence. The less experienced physician or teacher will use it largely as an aid to general observation combined with physical or pedagogical methods.

Psychologists in the main regard the use of the Binet scale on the part of any except trained psychologists, with a fine contempt, and usually grant scant, if any, recognition of the results obtained. From a rather extended opportunity for observation I can only reply to such that the proof of the pudding is in the eating, and that in the hands of certain teachers and physicians, even when these persons have not received extensive

training in exact psychological methods, I have seen excellent results obtained. Nor can I refrain from the remark that many psychologists are extremely likely to magnify the importance of their particular sort of training and at the same time minimize that of the scientifically trained physician. My own opinion is that some teachers and many physicians can make excellent use of the Binet tests in their respective lines of work and that they should be encouraged to do so. Teachers should obtain some preliminary training at some such places as the University of Pennsylvania with Dr. Witmer; Vineland, New Jersey, with Dr. Goddard; Faribault, Minnesota, with Dr. Kuhlman; Lincoln, Illinois, with Dr. Clara Town, or Stanford University with Dr. Terman. This training need not necessarily exceed a few weeks. Dr. Goddard of Vineland has for some years maintained such a course for teachers. Physicians of scientific training, natural aptitude with children and some experience in neurology, psychiatry and pediatrics, may rather easily begin this line of work without much additional training, although to them, also, a few weeks spent at any of the institutions named will naturally be of great service. For the physician or teacher absolutely exact results in this work are not necessary and it is doubtful if even the psychologists often obtain such.

What the physician and teacher really want to know is the general mental status of a given case.

It makes little or no practical difference whether a child is actually seven or nine years old mentally. What does make a difference is whether the child is educatable or non-educatable; to what degree he is educatable; whether he is retarded permanently or temporarily; whether he is low, medium or high in the intellectual scale, and these questions may often be solved by use of the Binet scale combined with a liberal use of common sense methods of observation. The scale also gives evidence of particular aptitudes or deficiencies, and this is of the greatest importance in laying out a course of advice or of education for the child.

THE THERAPY OF TYPHOID FEVER— A CRITICAL REVIEW.

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In spite of the advance in the treatment of morbid conditions, brought about by the steadily growing knowledge in bacteriology, sero and chemotherapy, we find ourselves still confronted with the painful fact that for the vast majority of diseases we have no specific treatment. Even the most optimistic disciple of science, when he reflects upon the problem to be solved, will realize that the whole question of the specific serum, vaccine, or chemotherapy of the various infections, is still in its infancy, and that it may take the efforts of generations to win supremacy over the world of micro-organisms with their unlimited power of proliferation.

Although, as far as typhoid fever is concerned, hygienic measures, and perhaps still more than these, the immunizing with typhoid vaccines, have

actually minimized the possibility of the spreading of this much feared epidemic, yet, the hopes raised upon the curative value of typhoid vaccines and other serological measures have so far at least been unsatisfactory.

But before these problems are solved—in other words, before we are able to attack this enemy with active measures, we have to fall back on the second possibility as the only one left in the fight, namely: to support the resisting powers of the tissues in the hope of exhausting the enemy, so they are able to supply autogenic anti-bodies, which are so essential for preservation of life against the rapidly multiplying intruders. This point of view has been recognized in a way for many years, and a routine treatment has prevailed for more than three generations, and is still considered by the majority of the profession as a proper regime, which is in brief: To take care of the ulcerated conditions in the intestines by admitting food in the shape of the least irritant character, namely, milk and albumen water, and these in small quantities; to give the intestines the least possible work and irritation. To disinfect the intestinal tract in the hope of killing the typhoid germ by administering calomel. To decrease the temperature by cold baths 70 degrees down to 60, and at the same time by supplementing these cold baths with friction while in the tub to increase the circulation and by doing so, to raise the tonus of the tissues and strengthen the heart and consequently arouse the patient from his delirium.

The intention of this paper is to submit the general adoption of this regime of treatment to a critical consideration, with reference to a modification of the so-called routine treatment, which I practice, the latter being based on the experience of more than 250 cases.

Before discussing the main subject, and without any intention of dwelling upon the prevention of the disease in question, which is not the purpose of this essay, I feel duty bound to mention the preventive vaccine which, according to our government statistics, is of unquestionable value. Commenting upon the treatment which I practice, a few words of general hygienic routine might not be out of place.

Whenever the diagnosis of typhoid fever is established, or even a suspicion of such an infection exists, hygienic measures have to be enforced.

The patient ought to be moved to an up-to-date hospital, where every convenience of modern treatment can be applied. If for one or the other reason the hospital treatment should not be permissible, the choice of room should be one that is large and airy and permits of ventilation day and night, without exposing the patient to draft. The temperature of the room should be 62 to 65 degrees, and only if the patient has to be exposed for the baths, for instance, should the room be heated up to 68, but surely not over 70 degrees. The bed should be set in such a way that it is easily accessible from both sides, and a single narrow bed has certainly the preference over the wider ones, for the easier handling of the patient.

The importance of the hygiene of the mouth and throat is obvious. The falling out of the hair is mostly due to poor nursing. There is no harm in cutting the hair of a male patient, for it makes

more favorable conditions for attending the scalp. Daily shampoos with green soap prove of the greatest benefit. The custom of cutting a woman's hair for treating the scalp to prevent the falling out of the hair, is, in my opinion, unpardonable. The scalp of a woman can be most properly taken care of by rubbing it with alcohol daily and with green soap once or twice a week, if comb and brush are used morning and evening and the hair braided to the right and left.

A sheet and one blanket are quite sufficient covers and additional covering and hot bags should be used only in case of a chill which might be due to the infection itself or complications. Chills frequently are caused by exposing the patient with a temperature of 104 to 105 degrees, for the purpose of sponging, taking rectal temperature, using the bed pan, or in giving enemata. All these procedures ought to be performed under the covers of the patient. As the rectum of the patient is greatly taxed by taking regular temperature every four hours, and by enemata once or twice a day (nearly all my patients, properly fed, are constipated, and require enemata), there must be extreme care taken to irritate the rectum as little as possible. The index finger covered with a finger cot and white vaseline, not carbolized vaseline, is very gently introduced into the sphincter while the thermometer, or hard rubber point of the tube of the enema bag, held by the other hand, is pushed forward very gently, the inserted index finger leading the way.

In taking up the treatment of typhoid fever, *the most important point to consider is the diet.* There is a tradition that lived for generations, namely, "Starve a fever and nurse a cold." This is attributed to a physician, and unfortunately this regime has been and still is, carried out. I believe that the man who was responsible for this doctrine, which he gave to the world in good faith, has caused the deaths of more victims than the powder and lead of modern warfare. Reasonable common sense that can be expected from the professional man must make it clear to any thinking brain, that an increase of heat means an increase of combustion, and if fuel is not supplied from the outside for this combustion, it must be taken from the inside—that means from the tissues. Now, if the fever is expected to run from three to six weeks, as is common in typhoid fever, and the food supply from the outside is set at the minimum, the supply from the inside fuel must be taxed to a maximum to make up for the deficiency of the outside supply. The consequence is the loss of tissue and this loss of tissue amounts to 20 to 30 pounds of the individual's body weight by this starving-the-fever regime. This loss of weight seems to me a very serious matter from several points of view and worthy of very earnest consideration.

If this loss of weight would be due to the combustion of a surplus of accumulated fat only, nothing better could be wished for, because it would relieve the heart of nourishing so many pounds of surplus fat so many times a minute, but unfortunately the tissues at the same time are contributing their carbohydrate and nitrogen, and all organs contribute their share. The most important of all being the heart, it will be easily understood that by weakening the heart muscles by starvation, the chances of fighting the infection are certainly badly impaired, and second to this

impairment of the heart, the rest of the already less resistant tissues are not sufficiently nourished and toned up, on account of the impaired heart action!

If we further realize that the self-defense of the tissues against the intruder consists in producing anti-bodies and that the final outcome lies in the superiority or inferiority of these anti-bodies, it will easily be understood how badly we jeopardize the chances of the infected individual by allowing him to lose 20 to 30 pounds of tissue, and depriving him, in that way, of 20 to 30 pounds of tissue-generating anti-bodies!

On one hand, the loss of anti-bodies; on the other, the lower resisting power of the tissues through under-nourishment and impaired blood supply by the heart! Hence a delirious state of the central nervous system, unable to hold its own against the impact of the infectious toxins! Hence an inability of the intestinal tissues to cope with the ulcerations, by producing healthy granulations; the results are hemorrhages and perforations! The same holds good for the skin and the sub-cutaneous tissues, which cannot resist pressure from the outside on account of not being toned up sufficiently, and so they become necrotic,—thus the bed sores! The weakened condition of the skin gives free access to germs from the outside—furunculosis results.

The hypostatic and the edematose status of the lungs, on account of the weakened condition of the heart and tissues, predisposing to invasion of the infection, complicate matters with pneumonia, infiltration, etc.

So much about the theory of "starve the fever." The other alternative is to feed the fever, and the question forced upon the practitioner is extremely important, inasmuch as quantity is concerned as well as quality.

There is still a dominating doctrine prevalent that the food must be such as not to irritate the ulcerations of the infected intestines, and the least irritant food, it is claimed, is milk.

I bar milk from the dietetic list altogether, and insist upon the following consideration:

It is generally accepted that the average healthy workingman needs 15 to 17 calories per pound of body weight, to keep in equilibrium. The caloric value required by a fever patient is at least 20 calories to the pound of body weight,—that means that an individual weighing about 150 pounds has to be supplied with at least 3000 calories.

A quart of *good milk* is estimated to represent 670 calories. To keep such an individual in equilibrium on a milk diet would require, accordingly, 4 to 5 quarts of good milk a day. It is obvious to say that the throwing of 4 to 5 quarts a day into the circulation will not benefit the fever heart. More so, if we consider the large quantity of albumen water and spring water given besides to "flush the kidneys"—still more work for this already so badly taxed heart!

But, it is claimed, milk will not form copious stools, consequently will not irritate the ulcers!!

The immortal Banberger used to preach to his students, never to attempt to prescribe for any

patient unless we kept in mind the anatomico-pathological picture of the morbid conditions. In doing so we will be aware that the ulcerated lesions are found in the ileum and cecum, rarely higher up in the colon, and still rarer in the lower part of the jejunum.

As food, of whatever consistency it might originally have been, will reach the ileum in a chymified form, the question as to irritating the intestinal ulcers is utterly irrelevant. As far as the influence of the milk diet is concerned in regard to the bowel movements, I could never convince myself of any favorable point in this regime. In the vast majority of these cases there will be from three to five and more diarrheal stools, with curdled milk particles left in the evacuations. These milk particles, which must have been rolling over the ulcerated area and most likely have been precipitated there, for a short time at least, are likely to have been of an irritating nature, causing increased peristalsis, which is proven by the number and character of the evacuations.

The increased peristalsis in an ulcerated area will certainly not increase, but decrease the faculty of healing and rather have a tendency to lead to complications from these ulcers. The slower the peristalsis, the less will be the irritation of this ulcerated area, with its sequels.

As the quality of the milk food, as well as the quantity necessary to supply the satisfactory amount of calories, is not favorable to the metabolism of typhoid, a regime must be adopted where the caloric value of the food is supplied in a far less quantity and be of such quality that it will not produce an increased peristalsis.

Let us compare for this instance, the caloric value of milk with other permissible food material:

100 ccm. milk represents 61 to 67 calories.

100 ccm. cow's butter represents 761 calories.

100 ccm. bread—oatmeal, rice, tapioca, or farina represents 330 to 350 calories.

100 ccm. albumen represents 400 calories.

100 ccm. cream represents 240 calories.

Considering that a normal individual will be plentifully supplied with a daily ratio of 60 to 70 grams of albumen, and that the fever patient is splitting up albumen, our first consideration must be to supply sufficient albumen to satisfy the normal daily demand, and to make up for the consumption due to the fever.

I am satisfied that I answer both of these postulates by feeding 100 to 120 grams of albumen a day. In supplying these 100 to 120 grams of albumen as an essential fundament of building up my caloric plan, I proceed in the following way:

One quart of milk—1000 ccm.—equal to 670 calories, which I use as a vehicle only, represent 32 grams of albumen.

200 to 250 grams of oatmeal represent about 20 grams of albumen.

Four to six eggs, or 100 grams of meat (if I choose to use the latter), will give me 50 to 60 grams of albumen.

In total—about 100 to 110 grams of albumen,

not considering the small amounts of albumen in cream, butter, etc.

Taking these figures as an essential base for the maintenance of an equilibrium of body proteids, as close as possible, it will be easy to construct our bill of fare in regard to the caloric value, as well as to its fitness in regard to proper quality and quantity.

These postulates would be outlined by the following general schedule, which is open to all kinds of combinations and changes:

Fever patient—150 pounds of weight—requires caloric value of food—3000 calories.

1000 ccm. milk (as vehicle) equal to 610 to 670 calories.

250 ccm. carbohydrates—bread, oatmeal, rice, farina—equal to 850 calories.

100 to 150 ccm. butter—equal to 760 to 1000 calories.

4 to 6 eggs—equal to 300 to 450 calories.

100 to 200 ccm. cream—equal to 240 to 280 calories.

Eggs may be substituted by scraped meat and vegetables in puree form. It is obvious to say that this diet cannot be enforced from the first day of treatment, and that we have to feel our way gradually. It is furthermore just as important to cater to the taste of the individual and to avoid distaste by giving variety.

Just at the time in the beginning of the disease, when the patient is feeling general malaise, with lack of appetite and will refuse food, the skill and tact of the physician has to set in to make his patient eat, and step by step increase the supply of necessary calories and increase the amount of calories with the increase in fever.

In proceeding this way, I have very rarely encountered very much difficulty in feeding. The difficulty I have had arose in cases only which came to my department at the German Hospital, after having been for four weeks on a milk-albumen starvation diet.

The reader, who so far has patiently followed my theoretical arguments, is justified at this point to ask for proofs of my statements, and I am in a very happy position to supply these proofs, not only by the research of this regime, but also by comparing it with the material under the opposite regime, which I had a chance to watch for seven years, when I had the honor of being one of the chiefs of the Medical Department of the German Hospital in San Francisco, besides dozens of typhoid cases which I saw in consultations. The most striking and convincing experience was furnished by the material in the typhoid ward of the German Hospital under a different regime of treatment.

My cases under the regime mentioned above, and the cases of my esteemed and most able colleague, who divided with me the care of the Medical Department, under the regime of the milk-albumen diet. There was no selection in the material. The cases brought in were alternately assigned to the first and second Medical Department, but in the same ward.

The unprejudiced observer could not be other-

wise than most strongly impressed by the different appearance of the patients under these two different regimes.

Here the patient bright and cheerful, in spite of a temperature of 104 or 105°; his cheeks are flushed from the fever, but he occupies a comfortable position in bed and he takes his food gladly when approached, without being forced. He does not seem to have lost in weight, and he often will complain of hunger. One or two enemata have to be given daily as the patient is, as a rule, constipated. There are no serious complications from the respiratory tract, with the exception of slight bronchitis; no bed sores, no phlegmasia, etc. I do not recall a hemorrhage for years and I recall two perforations only,—one in a Japanese boy, brought to the hospital in the acme of his disease, in a most emaciated condition. He was operated three hours after the perforation had set in, but died the following day. The other case was a young, robust fellow, but a drinking man, who got a relapse on the fourteenth day of his re-convalescence and experienced his perforation four days later (the 17th of April, 1906); operated immediately; complete recovery.

And there on the next bed a patient on the milk and albumen water regime! The flushed face is crestfallen, the breathing quick and labored. He is delirious or flighty, and it needs the persuasion of the nurse to make him swallow his quantity of milk; frequent diarrhea, bed sores, hemorrhages, etc.; the emaciation very pronounced. The case appears to be of the severest type. Without any doubt there are cases where the infection is of the severest type, caused by the violence of the germ, but at the same time I am convinced that many of the fatal cases were not of the severest type, but made so through weakening the defensive powers by faulty food and therapeutic measures. That leads me to submit for consideration the most advocated therapeutic measures, namely, the cold baths. Nearly every text-book, and to be sure the very best of modern ones, will advise you to use these cold baths from 75 degrees down to 60 degrees, with ice water poured over the back of the neck, to decrease the fever, brighten up the delirious patient and induce him, by means of pouring ice water to take deep respirations.

While the patient is in the cold baths, friction of the limbs is constantly executed to overcome the contraction of the peripheral blood vessels, through the chill of the cold baths, and to make the cold baths, in this way, tolerable for the patient.

By means of these cold baths, a better nutrition of the tissues is claimed. These baths are given, according to the height of the temperature, at intervals of three to six hours!

As danger of collapse is likely to occur, every text-book warns you to be prepared for such an event by providing strong black coffee, champagne, whisky, cognac, strychnine, camphor injections, etc.!!

I might be called a medical revolutionist if, in the face of so many authorities advocating these

cold baths, I dare to express myself, that I consider these cold baths in typhoid fever, a crime against nature. I realize that in uttering such an expression of criticism of an adopted routine treatment, I have to offer very strong and convincing arguments to justify my statement and my endeavor will be to show point by point, the fallacy of such treatment, and to argue the merits of the treatment which I would suggest instead.

The merits claimed by the cold baths are as follows:

First, to reduce the fever. At this point I want to impress the reader that the fever is not a disease, but only a symptom, and if it does not rise too high, a very beneficial symptom in stimulating the activity of the leukocytes—as scavengers—and of the tissues as producers of anti-bodies.

On the other hand we have to consider that the fever is created by toxins, and the height of the fever must depend upon the virulence of these toxins and their relationship to the resisting power of the tissues. If the virulence of these toxins is so great as to produce very high fever, with its detrimental influence on the nervous system, then only do we feel justified in interfering. The interference should then be directed against the cause and not against the symptom. Therefore we must use means to eliminate the toxins as follows:

I place my patient in a bath of 90 to 100 degrees. After the baths the patient is placed, without any effort to dry him, in blankets and surrounded by hot bottles. In this pack, as a rule, he falls asleep and perspires freely. Through this procedure he eliminates toxins through his body pores, and the temperature drops.

As before stated, delirium will be present in the very severest cases only, or if the patient is poorly nourished. But if that should be the case, pouring ice water on the back of his neck and chest will be still more effective in a warm, or hot bath, and the shock of the cold bath is avoided. The pores have been opened and the profuse perspiration in the pack, following the bath, has certainly eliminated toxins. Such a bath is given once a day.

If the baths should excite or irritate the patient, or for circumstantial reasons should be impossible, I make use of the following routine: My patient is rolled into a hot sheet placed upon blankets and surrounded by hot bottles, and a hot drink—whisky, claret punch, hot lemonade, chamomile or lindenblue—is given. This procedure once or twice a day is sufficient and is best used if the temperature begins to drop from the height of the daily curve. If the perspiration is very profuse, it might continue even after the blankets have been removed. A refreshing sleep during this perspiration is the rule. If this procedure should be too strenuous for the patient, and a decrease of the high fever alone is sought, cold sponging every four to six hours will answer the purpose, with a drop of temperature from one-half to one and one-half degrees after the sponge.

Second: The cold baths, by contracting the peripheral blood vessels at first and dilating them

subsequently by the use of friction, are supposed to increase the circulation in the skin and the tissues, increasing the tonus and preventing ulcerations (bed sores). As I stated before, the toning up of the tissues is very much more sensibly secured by taking care of these tissues by proper food in a general way.

Third: To prevent complications in the lungs. As mentioned before, the nutrition plays the biggest part, and if in existing stupor or coma, the respiration should be found to be too superficial, I have shown that effective measures can be resorted to in the warm or hot baths.

As a most important principle in allopathy is: *ne nocces!* it would be my duty to investigate the danger of the cold bath treatment.

In this connection, it is evident at a glance that the frequent manipulation of a patient, who is threatened with hemorrhages or perforations, on account of ulcerated morbid conditions in the intestines, will surely not decrease the possibility of such an event (Liebermeister recommends these baths hourly)!!!

I wish further to call your attention to the fact that by putting your patient in the cold bath you have induced a contraction of all the blood vessels in the skin and by doing so you suddenly throw a larger amount of blood, with increased pressure, into the intestines, where the ulcers are situated, and as the blood vessels near the base of an ulcer may be already eroded, a hemorrhage may be started by this suddenly increased pressure.

Furthermore, you throw for the time being quite an overwork on the heart—and this a toxemic heart! You must realize that the difference between the body heat of your patient's skin—with a fever of 104 or 105 degrees—and the temperature of the bath—70 to 60 degrees—amounts to 34 to 45 degrees! No wonder that your textbooks will warn you to beware of the danger of collapses.

We see collapses in our practice under all kinds of circumstances; collapses after surgical operations, hemorrhages, acute gastro and intestinal disorders, pure physis shocks, etc.; these are matters which, as a rule, are very easily restored to the normal state, by our routine stimulants, and will not be the subject of unreasonable alarm. Quite different is a collapse brought upon a toxemic heart that has been laboring under the strain of this toxemia for days and weeks, and by this strain has used up quite an amount of stored reserve power. *The collapse of a toxemic heart is the most critical condition that might arise in a fever.*

I have seen such collapses in and after these cold baths, and although the heart responds to stimulants for a short while, the damage done was mostly irreparable, and the outcome was fatal.

The statistics which are generally used to prove the efficacy of this Brand treatment in the United States, as well as in Europe, are the government's army statistics.

Take into consideration that the soldiers picked for the army are men of eighteen to twenty-four

years of age, and only the very healthiest and strongest. Consider, furthermore, that these people are under splendid medical care from the very beginning of the predominating symptoms, and that there is no time lost in diagnosis and treatment.

My Chief Professor, Herman Nothnagel, in advocating to his students, in his lectures on therapeutics, to support nature as closely as possible, illustrated nature's power one day, with the following words:

"Gentlemen—Human nature is so strong that she will not only try to make good for her own mistakes, but also will often correct the mistakes of physicians."

Considering the juvenile vigor and hygienic conditions of the army material, it will not be surprising that these army statistics are favorable ones,—in my opinion favorable ones in spite of the cold baths.

The third point of the red tape treatment that demands to be looked into is the very common use of calomel in the first weeks, also in the whole course of the disease, with the intention of insuring a milder course by attacking the germs in the intestines and disinfecting the whole intestinal tract.

In looking again on the anatomico-pathological picture of the typhoidal infection, we must realize that the typhoid is a general infection of the lymphatic system, particularly of the lymphatic vessels of the abdomen, the mesenteric glands indeed being the most involved. The invasion of typhoid germs into the lymphatic vessels and tissues and the propagation of germs there, takes place before the lymph follicles begin to swell,—that is, in the first week of the fever. At this stage of the disease, it would be an ideal solution of the problem, if we could throw such an amount of calomel into the circulation as would be necessary to kill off the germs in the circulation, as well as those deposited in the different organs, which certainly would be an abortive treatment! But this theoretical consideration is impossible in practice. It remains therefore to think of the local disinfecting purposes of calomel.

It would be out of the question to consider, in this respect, the first week, where besides the infiltration of the mesenteric glands, the lymph follicles begin to swell! In the second week the necrosis of the swollen lymphoids takes place, with formation of ulcers and crusts lasting to the end of the second and into the third week.

In the fourth week, after all necrotic tissues have broken away, healthy granulations prepare the healing of the ulcers, which takes place during the fifth and sixth week. If a relapse sets in, we find infiltration of lymph follicles, which so far have not been involved, and also of the previously infected ones. A local effect of calomel, therefore, could only be considered in the phase of ulcerations and granulations.

Now, these morbid conditions, even if left to themselves, will produce an increased peristalsis; hence the liquid stools, which certainly is not a favorable condition for ulcerations. By admin-

istering calomel we invoke increased peristaltic action, and as we know, a very vigorous one. Assuming that deep seated ulcers might be present and a strong peristalsis sets in, it is easy to understand that the danger of hemorrhage and perforation is increased.

I beg you furthermore to consider that calomel given in very small doses 1/10th of a grain hourly, until one grain is taken, is liable to irritate the kidneys. These organs have been heavily taxed already by eliminating the split up products of the proteids due to the high fever, and by the typhoid toxins resulting, to say the least, in an irritation leading to albuminuria, with hyaline casts; and now think of the additional irritation by a drug which is known to be a kidney irritant! As there are plenty of means to hurry evacuations without taking the chances mentioned above, calomel ought to be barred from use in typhoid fever.

In reading over this paper, the thought entered my mind that some of my esteemed readers might suspect that I am claiming to be original, in the matter of feeding regime in typhoid fever.

Nothing could be further from my thoughts than that. I have been raised under this regime at the European clinics, and I know that this regime has been adopted in many of the leading colleges of our country, at least, as far as the addition of carbohydrates to the milk diet is concerned. But to be sure the starving regime is still in the majority.

When I started to preach the preceding regime in our city eighteen years ago, I believe that I stood quite alone. In late years I believe that all of our leading clinicians have abandoned the pure milk diet and have added gruel and eggs to the milk regime, but I still see as a rule, a certain hesitation, a certain fear in selecting food in quality as well as quantity, to be sure I do not see anybody in this respect, to be as liberal as I am, and I am by far more liberal in my regime than the one I was taught at my mother clinics, which would not have permitted at the time, bread and butter, vegetables in puree form or meat (scraped beef, minced chicken, brains, sweetbreads, scraped young veal-steaks, Westphalia ham finely hacked), a regime which is steadily gaining ground in these days at European clinics.

As this essay was intended to be a plea for breaking away from an old red-tape regime, to one based upon modern conceptions of anatomico-pathological features looked upon with the opened eye of a self-thinking, broad-minded medical community, I wish to be pardoned if I have dwelt at length upon the subject in question, but as I had to plead for a logical consideration of the matter, I had to bring logical arguments to substantiate the justification of a change from the old red-tape to an antagonistic modern conception of the treatment.

X-RAY DOSAGE.

By HOWARD E. RUGGLES, M. D., Roentgenologist St. Luke's Hospital, San Francisco.

A simple, accurate method of measuring dosage of X-rays is needed, not alone in treatments (which should be given only by experts), but equally as

much in radiography and fluoroscopy, so that the safe limits of exposure may be determined.

The methods in general use are clumsy and more or less inaccurate, especially those which depend on color changes in tablets which are compared with standard tints. Different operators vary considerably in their estimation of the end points, and furthermore, it is not always convenient or possible to include one of these meters in every exposure of any length.

A much simpler way of getting at it depends upon the fact, especially emphasized by Sewall Cabot of Boston, that the quality and quantity of radiant energy given off by a tube depends absolutely upon the quality and quantity of electrical energy supplied to it. We have been using part of this idea for some time in the form of milliamperemeters in the tube circuit which tell us the quantity of current going into the tube. But the other factor is equally important, *viz.*: the quality of the current or the voltage on the tube terminals. This is the factor which measures the penetration of the rays; a tube of high penetration requiring a high voltage to force even small amounts of current through it, and a tube of low penetration requiring comparatively low voltages to light it up. It is best measured by means of the parallel spark gap. Table I shows the relation between effective voltage and the spark gap in inches on the usual interrupterless type of apparatus.

Another fact which seems to have been pretty generally overlooked is that the chemical and physiological action of a tube depends upon the whole amount of energy going into it; not the milliamperage alone, or the voltage alone, but the product of the two, or wattage, just as the amount of light given out on an electric circuit in a house is measured not by volts or amperes alone, but by watts. Such being the case, the old superstition that a low tube is more apt to cause burns than a high one is untenable; a high tube will burn just as quickly as a low one if you put the same amount of energy through it. The reason that this idea is so firmly rooted in the minds of most radiographers is that the coils we formerly used were unable to deliver as much energy to a high tube as they did to the lower ones. With more powerful transformers, such is no longer the case.

For the benefit of those who may doubt the preceding proposition the following experiment is offered. Cover half of a 5 x 7 plate with lead and expose the other half for 2 seconds to a tube backing up a 7-inch spark while taking, for example, 5 milliamperes of current. Reverse the plate, covering the exposed end, and let the unexposed half receive double the current of the first exposure for the same length of time with a tube which backs up only a 2½-inch spark while carrying the full amount of the current. If the target distance has been the same in both cases, and the exposures accurately made, the resulting deposits on the plate will be indistinguishable, proving that the chemical action has been the same.

The first (a 7-inch gap—70,000 volts) received 70 × 5 M. A. or 350 watts for 2 seconds.

The second (a 2½-inch gap—35,000 volts) received 35 × 10 M. A. or 350 watts for 2 seconds.

Each half has received the same amount of energy.

The same thing has been demonstrated physiologically: A boy with extensive favus of the scalp received on one side of his head an exposure of 6 milliamperes at 80,000 volts for 5 minutes and on the other side 12 milliamperes at 40,000 volts for the same time; the resulting reactions and epilation were identical in every way.

Extensive measurements have shown that a dose just sufficient to produce an erythema and epilation in the average patient is administered by 2,400 kilowatt minutes at 10 inches target distance; in other words, a tube of a penetration corresponding to 40,000 volts (or 40 kilo volts) could be run for 60 milliamperes minutes before administering a full dose, *i. e.*, if it were delivering 6 milliamperes, the patient could be exposed to it for 10 minutes (at 10 inches from the target).

Table II shows the same thing, the first column being voltages figured in terms of parallel spark gap, the second column giving the number of milliamperes minutes.

The operation of the method is really very simple, for example:

A patient has had two exposures of a hip—one with a tube at 50,000 with 10 milliamperes for 1 minute, another with a tube at 60,000 with 8 milliamperes for 3 minutes.

Is it safe to expose again? The patient has had: 10 milliamperes minutes at 50,000; at 50,000 the dose is 50 so 1/5 there; 24 milliamperes minutes at 60,000; at 60,000 the dose is 40 so 3/5 there. So the patient has had 4/5 of an erythema dose and it would not be safe to give another exposure inside of three weeks.

It will perhaps be objected that the method requires too close observation of the measuring instruments and target distance. That would seem to be an advantage rather than an objection; the more we watch and record our current and spark gap values, and the less attention that is paid to the appearance of the tube, the more exact our work will be and the more uniform will be our results.

With the target more than 10 inches from the patient's skin the length of exposure varies as the square of the distance, 12.2 inches allowing 50% longer exposure than at 10 inches, 14 inches allowing double the exposure at 10 inches, 20 inches allowing four times the exposure at 10 inches.

The figures in the accompanying tables apply to the current from the usual type of interrupterless apparatus delivering rectified alternating current. Induction coils give 10% to 20% more voltage for same length of spark gap, depending on rate of interruption and inductance used, so the exposure with them must be diminished correspondingly.

Portable outfits of the high frequency type deliver

such varying amounts of energy that the method is not at all applicable to them.

TABLE I.

Showing voltage equivalents of spark gap distance between needle points.

Inches	Volts
3.....	40,000
4.....	50,000
5.....	56,000
6.....	65,000
7.....	71,000
8.....	78,000
9.....	85,000

TABLE II.

Showing relation between spark gap distances and dosage in milliamperere minutes.

Inches	Milliamperere minutes
3.....	.60
4.....	.47
5.....	.40
6.....	.37
7.....	.35
8.....	.30

VITAL STATISTICS.*

By E. GOODMAN, M. D., San Francisco.

In these times of intensive research and rapid-fire discoveries, it appears like foolhardiness or presumption for one of the rank and file to comment on the ways and deeds of the powers that be; yet the greatest discoveries and thoughts sprang into being over night, out of obscurity, to upset prevailing thoughts and conditions.

Of course, if one has no peg on which to hang an argument, it is nothing short of effrontery to criticize constituted authority, just for the sake of seeking notoriety, but if one is grounded in fundamentals and sees them violated by those who should know better, it is his solemn duty to have the courage of his convictions and speak up in open meeting, be the reaction what it will.

My subject is Vital Statistics and the object of my criticism, the Government. Statistics, at best, is no sound criterion, for the reason that it does not take into consideration *conditions* and is just about as scientific as taking the specific gravity without regard to temperature and pressure, or prescribing digitalis without regard to the condition of the heart and collateral circulation.

But Vital Statistics cannot be placed in the same category with ordinary statistics, for the reason that it is not amenable to verification and therefore of no value.

I am in receipt of a pocket reference book of International List of Causes of Death, issued by the Department of Commerce, Bureau of Census, and presume every physician has been similarly favored. The incongruity of placing Vital Statistics in the Department of Commerce is the best argument for a Department of Health. Not only is it an incongruity, but it is a stigma upon the medical profession to have commerce and labor raised to the dignity of a department and making the national health and medical profession subservient to commerce. That is surely worthy of being styled "dollar diplomacy."

I must confess that I have more assurance in

being able to fill out an acceptable death certificate, than I have of seeing the same verified by an autopsy. The sting is taken out of this confession by the fact that I am in plenty of good company, for a noted pathologist is quoted as saying that fully 50% of ante-mortem diagnoses are disproved by post-mortem findings.

In view of such post-mortem statistics, of what value is "Vital Statistics"? Even if violent and accidental deaths, deaths from occupational diseases, from specific infections and other obvious causes can be established, beyond the peradventure of a doubt, yet the great number of doubtful causes vitiates all results. Still, the only thing that stands between vital statistics, as a guess, and vital statistics, as a science, is necropsy. A necropsy does not admit of dispute and is eminently scientific, for it proves the cause of death.

If the government cannot establish vital statistics on a scientific basis, it were better to spend the people's money in a more profitable and creditable manner.

Compulsory post-mortems would, of course, meet with the same fierce antagonism as did compulsory vaccination, compulsory physical examinations and compulsory disclosure of private medical formulae, or even compulsory education, in the long ago.

But the sentimentalism could be overcome. The best arguments would be that it would forever banish the fear of being buried alive; that the features would not be disturbed; that no part of the remains would be retained for exhibition purposes, without consent; that the body would be given back for burial; that the dead would aid the living in the matter of longevity.

Having thus unburdened myself, I am ready to be disrated, or prosecuted for "lese majeste."

THE MEDICAL SITUATION OF THE NEW WORKMEN'S COMPENSATION ACT.*

By J. ROLLIN FRENCH, M. D., Los Angeles.

The new Workmen's Compensation law, which went into effect January 1, 1914, is a broad measure, relating to compensation insurance and industrial safety. It establishes an industrial accident commission to be composed of three members, to administer its compensation features, to maintain a mutual insurance fund for the state, and regulate provisions relative to safety.

All classes of employment come under this act, excepting farm labor and domestic service, which are at present protected by common law liability, but may elect to come under the Boynton act.

Compensation is payable for every injury caused by accident arising out of and in course of employment, unless due to intoxication or wilful misconduct, and is payable generally on a 65% basis, after the first two weeks, with fixed maximum and minimum limitation and for a varying period of time, depending upon the nature of disability.

In addition to the above stated compensation for the injured employees, the employer must furnish and pay for reasonable medical, surgical and hos-

* Read before the San Francisco County Medical Society, November 17, 1913.

* Read before the Los Angeles County Medical Association, January 15, 1914.

pital treatment, for a period not exceeding 90 days from date of accident.

It is this feature of the law that is of interest to the doctor. You can readily see that the accident cases have been taken out of the hands of the "shyster" lawyers and put into the hands of the doctors, to determine how much shall be paid the injured man, because now it is the doctor who virtually signs the checks on the insurance companies' treasurers when he signs the applications for compensation for the injured, as a result of an accident.

Are we going to, or have we earned the name that has been applied to the lawyer, "shyster"?

It has been said that it depends on which side of the fence we are on, what we see. I am going to try and draw the picture of each side of the fence that we may view our own back yard as well as that of our neighbor.

First, I am going to draw the picture as the doctors see the situation, relative to the ridiculous fee bill which the insurance companies have asked us to sign. I might here say that we should feel proud of the members of our Society, because as far as is known, but very few have gone on record as admitting that their medical and surgical services are worth but 30 cents.

The Casualty Underwriters' Association, which is composed of nearly all of the leading casualty insurance companies doing business in California, with the Adjusters' Association, met in San Francisco in December, and formulated the ridiculous fee schedule that was published in the Bulletin of the Los Angeles County Medical Association under date of December 23, 1913.

By virtue of their policies issued to protect the employers, the insurance companies are obligated to pay full medical aid, from the date of accident, as well as lost time after two weeks.

The board insurance companies and the state will not tolerate other insurance companies cutting their rates, yet they turn around and cut the rates of their surgical services in order to promise their policy holders a return dividend.

It is my opinion that before the state or anyone else should attempt to regulate the fees for services rendered, they should take into consideration the usual fee that has been paid, or consult with a representative body of people with whom they wish to do business. There is no question in my mind but that a reasonable concession should be made because of the fact that collections would be 100% cash, but I do not think it just, that the physicians be asked to give all their profits for the benefit of the policy holders.

If the members of this Society are going to tolerate such a ridiculously low fee schedule at this time, we had better get into some other line of business. Needing the work is no excuse, because if we tolerate this cut at this time, it will not be long before others may be expected. The insurance companies should not be considered as charity patients; they are going to make more money this year than ever before, because they have increased their rates many times. I consider that they will not have nearly as much to pay in the way of claims

for accidents, etc., if the proper medical attention is given by responsible physicians, as they have had heretofore under the old liability law, yet to hear them talk, you would think they were all getting ready to go into the hands of a receiver.

We must take our stand now, or never. We must "hang together" or else we will "hang separately." Talk to your professional friends and have them in turn talk to their friends. If the insurance companies cannot get you to sign their fee schedule, they will have to pay you a reasonable fee for your services. They are going about securing signatures to this schedule in a clever manner: they come to you and ask you to sign their schedule with the understanding that you are going to get all of their work; they will go to your friend with the same story. He signs also, but when you come to read the agreement, you will see that the contract is one-sided; you agree to treat in accordance with their schedule, but they do not agree to anything. They will use our names to get others to sign and so on, until they have us where they want us.

Use any reasonable means you wish to get business, but do not sign a one-sided, stipulated, definite cut in prices with no hopes of making it up in another way, aside from stuffing your bills or treatment, which would be nothing short of stealing. Do not make an agreement that you know you cannot honestly live up to and make a reasonable profit.

The insurance companies have added to their premiums an amount that is adequate to care for reasonable medical charges. If they can get us to work for nothing, of course they will be that much ahead.

Now let us see what our neighbor's back yard looks like, or why the insurance companies have asked us to accept this ridiculous fee schedule. Members of the medical profession have forced the insurance companies to have some definite schedule upon which they may base the adjustment of professional bills. Not long ago, I read an article that was entitled, "Insurance Companies Squeeze the Doctor Again." Did you ever stop to think that some doctors have squeezed the insurance companies many times more than the doctor has ever been squeezed?

You would be surprised if I told you of the many times that the insurance companies have been squeezed by our local physicians. They have had stuffed bills, and they have had unreasonable ones, yet in most cases they have taken their pill and said nothing. To give an example of this:

Not long ago, one of our local physicians attended a few accident cases over a period of six or eight weeks; two or three of the cases were operative, the remainder were only minor. A bill for something like \$1700 was rendered. I am satisfied that had the cases come as individuals, the physicians would have been well satisfied with \$500 cash.

Another case was brought to my notice. A girl cut her finger slightly, with a bread knife; no infection, but the doctor dressed the wound

fifteen times; he knew the insurance company was to pay the bill.

The following is another marked example: A professional malingerer came to me not long ago as a patient. He came in with a tear in his shirt, dusty coat, etc. Had "just fallen off a street-car and broken two ribs." He gave me a beautiful story, and very good symptoms, too. I examined him carefully, could not locate the broken ribs, but did not say anything at the time. The third day he came to me to sign an application on an insurance company for \$400, the amount that was to be paid for two or more broken ribs. I told him I would not sign for two broken ribs because I did not think he had any. He left in great anger; would sue me, the street-car company, and the insurance company. He came back the following day with certificates from five different doctors, stating that he had anywhere from two to four broken ribs. I told him I did not care if he had fifty certificates, I would not sign unless he would have an X-ray picture taken. He settled with the insurance company for \$14, instead of \$400, because he said he was afraid of the X-ray.

I do not question that many doctors of Los Angeles have signed applications for money on the insurance companies that they (the doctors) themselves felt were unjust, yet they felt they had to do it or lose a patient or a fee. Should that not be called a legalized hold-up?

Doctors, as a rule, are rated as a class by the layman; therefore, those that will stoop to the aforesaid irregularities give a black eye to the whole profession. Why can we not have an active "grievance committee" that would chastise the man that renders the unreasonable high bill as well as the one that agrees to work for thirty cents and grafts the rest? I think that if the Los Angeles County Medical Association would handle irregularities of all kinds, as do the Los Angeles County Bar Associations, that a higher standard would soon be maintained. Much credit is due our Secretary for the hard work he has done to bring our Society to its present standing and efficiency.

It has been said, "In Union There Is Strength," and it is my opinion that if we would combine our activities and influence, and manifest a mutual interest in the protection of others, as well as the upbuilding of our present Society, we would soon put our Association on a business basis that would be a great factor for the betterment and strength of our profession of the future.

SOME PRINCIPLES GOVERNING THE INDICATIONS FOR CAESAREAN SECTION.*

By ALFRED BAKER SPALDING, M. D., San Francisco.

Good results can be obtained in abnormal obstetrics if sufficient attention is given to the patient during pregnancy, and if the patient is confined by a competent physician in a hospital devoted exclusively to obstetrics. Well conducted maternity hospitals are able to maintain a maternal mortality of a fraction of one per cent., a fetal mortality of

less than five per cent. and a general morbidity rate of under fifteen per cent. This is an important point to consider in discussing the indications for such a valuable operative procedure as is Caesarean section because the relative values of all obstetrical operations are based upon experience obtained in such perfected institutions.

It is unfortunate but true that the great majority of women must be confined by midwives or by very busy general practitioners for very small fees, so small that it does not pay the general practitioner to train especially for obstetrics or to give unusual care to the individual patient. However, as many women deliver themselves safely, the attendant learns to interfere as little as possible with his normal confinements at the time of labor.

When labor is protracted, or convulsions occur, or the cord is prolapsed, or serious hemorrhage starts, then the attendant is in danger of making a bad matter worse by efforts to accomplish a rapid delivery. He does not, as a rule, treat his obstetrical patients with the same consideration that he gives to his other surgical patients. He attempts to perform operations which are well known to entail risk to both mother and baby, amidst the worst possible surroundings, with meager equipment and with insufficient assistants. One thing only impels him to send his patient to a hospital and place her in the care of a better trained accoucheur and that is the absolute impossibility for him to drag by physical force the child from the maternal passages.

Besides the obstetrician and the general practitioner, there is a third attendant who attends to a considerable number of confinements, although he rarely speaks of his attentions. This is the surgeon practitioner. With this type of attendant, the patient is usually saved unnecessary examination or injury from forceps for the attendant does not claim either unusual diagnostic acumen or obstetrical skill. When emergencies arise, demanding interference, he often plays his one trump card—Caesarean section.

To discuss the indications for Caesarean section, it is necessary to consider not only the pathological condition present and to compare the relative values of Caesarean section with other time-honored operations, but one must take into consideration the type of attendant who is called upon to meet the situation. Judgment is needed to determine not only when the operation is indicated, but also if conditions justify it. An operative crust should not overflow the diagnostic pan.

For instance, in the case of moderate contraction of the pelvic outlet, either in the bi-ischial diameter or in the posterior sagittal diameter, with the child presenting by the breech, the general practitioner may be forced to do a craniotomy on the after-coming head because he fails at the opportune time to diagnose the condition; the surgeon may do a needless Caesarean section while an obstetrician might meet the condition by placing prophylactically a pubiotomy saw.

It is easy to quote a list of indications for the operation of Caesarean section. One reads of the relative and absolute indications in cases of pelvic

* Read before the San Francisco County Medical Society, September 23, 1913.

contraction, of eclampsia, placenta previa, prolapsed cord, breech presentation, tumor formation, heart and kidney disease, Boston disease, and previous Caesarean section. My own experience is not great enough to permit me to express myself with assurance upon the relative values of this list of indications; nevertheless, it will probably prove more interesting to base my inferences upon this experience, meager though it is, than to quote from literature you have probably already read.

In reviewing my records in preparation for this paper, I find that I have operated myself or have assisted others with this operation in twenty-five instances. In every case there existed a grave danger for the mother or child which was met successfully, so far as all the mothers were concerned, by the Caesarean operation, and yet in some instances, I am convinced delivery could have been accomplished by other procedures. To discuss the indications, these cases will be placed in groups according to the frequency of occurrence.

Most frequent are the patients with pelvic disproportion. In routine examination of private and hospital patients, I have met with contracted pelvis, over a series of seven hundred confinements in a little less than 10%, but have seen in this series only two patients with a true conjugate of $7\frac{1}{2}$ cm. or less. With one of these Caesarean section was most satisfactory, while with the second an attempt at premature labor was fatal for the child and caused a severe laceration in the mother. In two consultations, this serious degree of contraction was met with twice. In one case, the Caesarean operation gave perfect results; in the second case, the condition was overlooked until the patient was in a most serious state as a result of several hours of anesthesia and protracted attempts at high forceps delivery. A most difficult craniotomy and extraction resulted in a complete laceration of the perineum.

Ten Caesarean sections were performed for moderate degrees of pelvic contraction. In four cases the operation was performed with perfect results to both mother and baby after severe test of labor had failed to cause the head to engage. I have always made it a rule to have patients with moderate degrees of pelvic contraction undergo a good test of labor unless some other condition besides the pelvic contraction existed to indicate operation. With one patient in the above group, after two days of ineffectual labor the presentation changed spontaneously from vertex to breech and the Caesarean section followed. This patient subsequently delivered herself spontaneously of a living child. Patients delivered with forceps or version after a test of labor have not given satisfactory results. I am convinced that uncomplicated patients with moderate degrees of pelvic contraction should undergo a test of labor, if they can be protected against infection during the test, as by far the larger number will deliver the head into the cavity of the pelvis. But when the test fails, I believe resort should be had to Caesarean section if the patient is in competent hands, or resort to craniotomy should be had if the patient is in the hands of an inexperienced operator.

The six cases of doubt in which no test of

labor was carried out were complicated as follows: One patient gave a history of previous loss of child by high forceps; two patients had had previous Caesarean section; one patient was an old primipara with an ankylosed hip; one patient was an old primipara with an outlet contraction; one patient was a rachitic, debilitated dwarf with chronic nephritis. All the mothers of the above series recovered but the baby of the rachitic dwarf died shortly after the operation.

There were four Caesarean sections because of pelvic tumor. One was a simple parovarian cyst that, had an accurate diagnosis been possible, could have been left alone to rupture, probably without danger to the patient. One was for fibroid of the uterus in a patient who had lost one child because of the tumor and who requested a Caesarean at term with myomectomy and resection of the fallopian tubes. One was for fibroid with a history of previous Caesarean section and one was for a massive hematoma which developed suddenly during the course of a normal labor. The operation was successful for all these mothers and their babies. The last patient subsequently gave birth spontaneously to a live child, but suffered later in a third confinement with spontaneous rupture of the uterus. It is needless to state that all patients who have once had a Caesarean section require most careful watching in subsequent labor and not infrequently need a second Caesarean section for no other reason except that the uterus is weakened with scar tissue.

Three patients have been operated on because of placenta previa. All were primipara and all were saved their babies without serious injury to themselves. In my experience with placenta previa, I have never lost a mother but have not saved one-half of the viable infants by resort to version, for which reason I am in favor of recommending Caesarean section in suitable cases of placenta previa. Two patients with broken compensation from serious endocarditis and one patient with great edema of legs, vulva and abdomen were operated. The mothers all survived and the two viable children were saved. One baby died of immaturity as the operation was performed for broken compensation at the sixth month.

Of the remaining three cases, one was operated by my interne during my absence, for eclampsia. One was operated in consultation for serious toxemia resulting from several weeks of pernicious vomiting because of the need for rapid delivery, and because the attendant was an expert abdominal surgeon with insufficient confidence in a vaginal operation. One Caesarean was performed for the sole indication that a previous Caesarean had been done and labor was becoming protracted. No indication for the previous Caesarean could be ascertained. Of these three patients, all recovered and one baby was delivered alive and well. The other two babies, one from the eclampsia patient and one from the pernicious vomiting, were both born dead.

This completes my experience with Caesarean section. The list of indications is quite varied and the results have been satisfactory. In obstructed labor, the judging of indications is not very dif-

Summary:

No. Cases...	Indication	Time of Operation	Mortality of child.....	Mortality of mother....
2	Con. Pelvis T. C. 7½	Before labor started	0	0
4	Con. Pelvis Mod.	After prolonged test of labor	0	0
1	Con. Pelvis Mod. Loss of 1st baby by forceps	Before labor started	0	0
2	Con. Pelvis Mod. Previous Caesarean	Before labor started	0	0
1	Con. Pelvis Mod. Old primipara	Before labor started	0	0
1	Con. Pelvis Mod. Outlet contraction	Before labor started	0	0
1	Con. Pelvis Mod. Chronic Nephritis	Before labor started	1	0
1	Parovarian Cyst	First stage labor	0	0
2	Fibroid Uterus	Before labor started	0	0
1	Large Pelvic Hematoma	After prolonged labor	0	0
3	Placenta Previa	First stage labor	0	0
1	Endocarditis Broken compensation	Sixth month Pregnancy	1	0
1	Endocarditis Broken compensation	Last month Pregnancy	0	0
1	Toxaemia with massive oedema vagina and perineum	At onset of labor	0	0
1	Eclampsia	First stage labor	1	0
1	Pernicious vomiting	Fifth month Pregnancy	1	0
1	Previous Caesarean Section	First stage labor	0	0

Total, 25.

Mortality viable babies, 9%.

Mortality mothers, 0%.

ficult but necessarily requires great patience. In serious hemorrhage from placenta previa or accidental hemorrhage, rapid judgment is needed and much depends upon the operator. One must not place too great risk upon the mother without first

considering carefully the excellent record of Braxton Hick's version.

It requires careful judgment, which can be obtained only by treating many patients, to decide individual cases of placenta previa just the best method of procedure that will give the best results to mother and child. There is no doubt, however, that in some varieties of placenta previa, good operators can obtain their best results by recourse to Caesarean section.

In general, mechanical conditions which endanger the life of the child, as well as non-infectious conditions which weaken the uterine muscle or strain the maternal heart, offer indications that one must consider in thinking of Caesarean section. So long as infection does not complicate the condition, Caesarean section is a most valuable operation but in the presence of infection or in doubtful cases where the danger of subsequent infection is a probability, Caesarean section has only a limited field. Toxic conditions such as eclampsia, pernicious vomiting and nephritis usually influence the child so badly and the lowered resistance of the patient so often precedes infection that these conditions can only rarely be considered to indicate Caesarean section.

There is no doubt that the sphere of indications for Caesarean section is growing and there is considerable danger that the pendulum will swing too far toward the operative side. It should not be forgotten that even in good hands the operation carries with it a maternal mortality in the neighborhood of five per cent., or ten times the maternal mortality obtained in confinements generally.

HYGIENIC SHOEING—ANATOMICAL FACTS VS. CONVENTION AND STYLE.*

By C. C. CRANE, M. D., San Francisco.

The evidence to be submitted consists, in the main, of four facts:

(1). In the examination of the feet of one thousand adult Puerto Ricans, who had never worn shoes, virtually not one presented evidence of foot-illness or deformity.

(2). In the examination of the feet of one thousand individuals, who have worn shoes for a considerable period of time, and in whom the feet are not troublesome—that is, are symptomless—it is rare to find a foot that is in normal condition.

(3). A very large percentage of shoe-wearing people present evidence of foot trouble which is promptly relieved by shoeing in accordance with anatomical facts.

(4). After a canvass of practically all of the local shoe stores, the hygienic shoe is found to be conspicuously infrequent.

In virtue of these observations, is it at all surprising or remarkable to note the amount of foot-trouble which is so prevalent as to deserve to be called endemic! The claim that every foot-ill is due to faulty shoeing is not made. The claim that every foot which is unanatomically shod gives rise to subjective or objective evidence of abuse is not

* Read before the San Francisco County Medical Society, November 18, 1913.

made, but is explained by the fact that the human body, as a whole, is equipped rather extravagantly with a power that tolerates abuse, and in the distribution of such a power the feet were not slighted.

The claim that many foot-ills may be cured by proper shoeing is made. The claim that many foot-ills, *not* curable by proper shoeing, might have been entirely prevented by proper shoeing at a proper time, is made. In short, if these claims can be substantiated, then a vast number of foot-ills come into the realm of preventable diseases and should, therefore, be properly dealt with as such.

Realizing the predicament, we naturally inquire for information that will aid us in placing the blame where it belongs: in finding out who is responsible, so that a repetition of, or a continuation of, the error may be, if possible, prevented.

Where does such blame belong? Whose is the responsibility? What excuses are offered by the victims and by them who victimize?

When the situation is analyzed it seems evident that the responsibility for the prevailing conditions is one that is participated in by three parties, namely: the shoe manufacturers, the shoe-wearing public, and the medical profession.

The excuses of the three parties alluded to carry about the same weight, or lack of weight, as is usual with excuses, and serve to excuse to about the same degree that excuses usually serve to excuse—*nil!*

The manufacturers meet you rather openly upon their platform—which is, by the way, a monetary platform—and frankly tell you that they are not students of anatomy; that they are not dictators of fashion; that they are not advocates of reform. They tell you that they are business men who intend to make only such shoes as the public will buy. Their point of view is practicable and business like; what more can be expected from the business man? Their attitude offers one important item of help in solving the problem, and this item should not be lost sight of, namely: *they intend to produce and offer for sale only such shoes as the public will buy!*

Now let us consider the public and their excuses. They attack a hygienic shoe from the artistic standpoint, backed by a considerable amount of unacknowledgable pride and a well-nigh morbid desire for style. That they have not inquired into the rationale of the hygienic shoe is obvious; that they have taken little or no interest in prophylactic shoeing is evident. To acquaint them with the fact that their shoes do not fit their feet, hardly makes them curious enough to satisfy themselves upon the point. To assure them that that which, to their minds, constitutes beauty in an unhygienic shoe is, at least, anatomically untenable, arouses little more reaction than a questioning look or a shrug of the shoulders.

To insist that style is, at best (or, may I say, at worst) only a mental caprice, a subtle whim, a passing fancy, and that it is accepted, as it was offered, without any particular consideration as to the efficiency or the worthlessness or the abusiveness of the thing declared to be stylish; even this pre-

cipitates no mental disturbance and aids the argument in favor of hygienic shoes too little to warrant the public in accepting them. But point out to the public that the stylish shoe is the agent which is responsible for many of their foot-ills, and immediately they are aroused; they are interested in any measure which promises relief; they are open to argument; they will accept proof, and the proof is not difficult to establish.

Thus the public's excuses are seen to be not unusual, not remarkable. Stylishly they are correct; artistically they are incorrect and anatomically they are impossible! But is the public deliberately and wilfully doing those things which will unquestionably produce physical mishap? The idea is ridiculous. They are merely following the line of least resistance in that they are accepting what the style-makers prescribe; and so it appears that we have another item which is of great importance in solving the complex problem, and it is perfectly obvious: *the public needs instruction as to what constitutes hygienic shoeing.* If sufficient instruction is given to the public, a demand will be made upon the manufacturers, and if the public insists upon hygienic shoes the manufacturers will supply them.

Now as to the excuses of the medical profession. They have none! But having no excuses does not excuse them nor does it release them from entire responsibility in the conditions which exist. The position of the medical profession in this matter has been more or less neutral; their attitude disinterested unless, perchance, some member may have been the victim of ills produced by unhygienic shoeing.

After such an experience not much time has been lost in argument to convince and convert him. Henceforth it is at least his privilege (and perhaps his duty) to see to it that others, equally unfortunate, may profit by his experience and be relieved or, better still, be prevented from undergoing such unnecessary suffering. Through such an experience is evolved the third item of help in the solving of the difficult problem: *the medical profession must be depended upon to spread the knowledge concerning hygienic shoeing in such a manner that the painful consequences incident to unhygienic shoeing shall not be allowed to occur.*

Not long since we were astonished at the results of the crusade against yellow fever. The end in view was not so much the *cure* of the disease as the *elimination* of the disease. More recently a very active campaign has been in progress against tuberculosis, and here again the attempt has been made not only to *cure* those already afflicted with the disease, but also, and the more happily, to *exterminate* this disease which has been aptly denominated "The White Plague." The results obtained and obtaining in those instances are not only magnificent tributes in a great measure, at least, to the medical profession, but also are they most worthy efforts because of their economic value and the preventing of suffering and the postponing of death.

Why not apply some prophylactic measures against the many preventable ills brought about by unhygienic shoeing? To be sure, yellow fever,

tuberculosis, and foot-strain are not equally serious and, therefore, not equally important, inasmuch as the latter is rarely, if ever, fatal; but the results of faulty shoeing represent a very real condition of preventable waste, of needless suffering, and of unnecessary dissipation of that most precious asset of us all, human energy!

The obstacles in the way of hygienic shoeing have been mentioned and they should not be difficult to overcome, provided that the campaign is begun in the right way and started from the right quarter.

The manufacturers must have a demand made upon them for hygienic shoes. This demand must come from the public, and the public, in order that they may be able to create the demand, must be instructed along the line of hygienic shoeing, and such instruction must come from the medical profession; not so much from the specialist as the men in general practice; not so much from those who are engaged in the relief of such suffering, as from you who have it in your power to prevent such suffering.

Undoubtedly the greatest good can be rendered to the greatest number of people by the watchfulness and oversight of the family physician who has so much to do with the public at large, as he is the one who is so frequently consulted, first of all, in just such instances. His opinion is valued highly; his judgment is relied upon; his position is unique in that his decision is final. If he advocates hygienic shoeing we shall have hygienic shoeing, and this at no far distant time.

It is pertinent to inquire as to what constitutes a hygienic shoe.

The ideal shoe must have two qualifications. First, it must allow free foot function; second, it must promote strength of the foot when in use.

Ideal shoeing can be obtained only with the introduction and continued use of moccasins. Whether or not the public will ever see fit to adopt moccasins for universal use is a question, but at present such adoption is hardly probable enough to warrant serious consideration.

It is evident, then, that we must accept a near-ideal substitute, and the question arises, How shall it be patterned? And the answer is, Patterned to fit a normal foot. To-day there are, in the market, plenty of shoes for infants and children which are more or less desirable, in that they are roomy, broad-toed, of fairly good fit and quite comfortable.

Such shoes are lacking in those details, the presence of which would stamp them as being hygienic. Such shoes are easily obtained in the market; in fact, it is rather more easy to obtain such shoes than otherwise, and so, on the chances, the infant will probably begin his shoewearing career with shoes which, although not ideal, are not abominable.

(To be concluded in May, 1914.)

SOCIETY REPORT

ALTA DISTRICT SOCIETY.

Whereas, The insurance companies of the State of California, in furnishing protection to the employers of labor under the Employers' Liability

Act passed at the last session of the legislature, have issued a Fee Bill with contract to care for the patrons that is not adequate to the services required. Such fees as they have prescribed bring the profession of Medicine and Surgery on the level of unskilled labor; therefore, be it

Resolved, That we members of the Alta District Medical Society refuse to enter into such contract and lend our knowledge and skill to enhance the profits of said companies.

(Signed)

W. E. TRUEBLOOD,
C. A. TILLOTSON,
W. WHITTINGTON,
J. A. MOORE,
A. N. LOPER,
PAUL R. WALTERS,
CHARLES M. GRAHAM.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of February, 1914, the following meetings were held:

Medical Section. Tuesday, February 3.

1. Medical Hospital Bookkeeping. W. R. Dorr. Discussed by Harry Sherman.

2. A Brief Summary of the Registration Law for Nurses and of the Requirements for Registration. Miss Annie Jamné, R. N. (by invitation).

3. The Nursing Situation Since the Passage of the Law. Miss Gertrude Courtright (by invitation).

General Meeting. Tuesday, February 10.

1. The Present Status of the Sympathetic Nervous System. Especially from the Standpoint of Vagotomy and Sympathicotomy. Julius Mast Wofsohn. Discussed by W. F. Schaller, W. C. Alvarez, H. D'A. Power, R. L. Wilbur, H. C. Naffziger, H. R. Oliver and René Bine.

2. Some Aspects of the Duodenum in the Roentgen Picture. (Illustrated by Lantern Slides.) C. W. Lippman.

Surgical Section. Tuesday, February 17.

1. Notes on the Operative Treatment of Pott's Disease. Demonstration of Three Cases. W. I. Baldwin. Discussed by G. J. McChesney, J. T. Watkins and C. C. Crane.

2. Practical Method of Approach for a Nasopharyngeal Fibroma; with Lantern Slide Demonstration. Henry Horn. Discussed by F. Fehleisen and Cullen Welty.

3. Value of High Frequency Current in Treating Vesical Calculi. Martin Molony, John M. Williamson. Discussed by V. G. Vecki, Henry Meyer and S. H. Beasley.

Eye, Ear, Nose and Throat Section. Tuesday, February 24.

Dr. H. Y. McNaught, Chairman. Dr. H. S. Moore, Secretary.

H. Y. McNaught: Acute Frontal Sinusitis with Epidural Abscess. Case operated by Dr. B. S. Stevens, with a swelling over the right eye from pneumococcus infection of one week standing. There was temperature 104½, pulse 150; headache, especially over cerebellum; stiffness of neck; slight mental disturbances. At operation there were found fistulae through both plates of the frontal sinus, giving subperiosteal and extradural abscesses. The opening in the inner wall was enlarged, the mucous membrane removed and the patient is making an uneventful recovery.

H. Y. McNaught: Serous Labyrinthitis in One Ear with a Purulent Labyrinthitis in the Other. Case of child eight years of age; eight weeks sick in September, 1913, with cerebrospinal meningitis. During the sickness child suddenly exclaimed "My ears!" and was found to be totally deaf. At present the hearing is good in the right ear, total deafness in the left. Caloric negative in the left.

positive in the right. Turning shows an imbalance of 30-15.

C. F. Welty: Comparative Demonstration of Radical Mastoid Operated Cases; Two with and Two without Skin Graft. The quickness of healing and the influence on hearing of a lack of scar tissue about the stapes were pointed out. In the discussion the tendency of the skin graft cases to return for treatment in after years was dwelt upon and brought forth the acknowledgment by Dr. Welty that he would not consider it advisable to skin graft a case that could not see a competent specialist at least once in six months.

J. J. Kingwell: Three Cases of Radical Mastoid Operation. Cases were shown to demonstrate the remarkably good hearing that could be obtained by intelligent tamponing methods and careful attention to surgical cleanliness after operation.

H. B. Graham: Healed Tuberculosis of the Middle Ear. Case 20 years of age; suppurative since childhood; radical operation; tampon after treatment. Complete healing with decreased hearing. Diagnosis made clinically, pathologically and with guinea-pig inoculations.

J. Cowan. Gross and Microscopical Demonstration of Specimen of Carcinoma of the Larynx.

H. B. Graham: Demonstration of Gross Specimen of Tuberculosis of Larynx. The clinical diagnosis in these cases made by Dr. Graham favored in the first case tuberculosis, and in the second carcinoma; both were well advanced and neither showed enlargement of the cervical lymph nodes. Dr. Cowan pointed out that this lack of lymph gland involvement was not uncommon and should not weigh heavily in the diagnosis. He pointed out the cords as the seat of origin in the majority of carcinomatous cases.

Dr. Redmond Payne: Cysticercus under the Retina. Case in a man who had lived in the Sacramento Valley; source of infection probably river water or vegetables. In the lower right quadrant, toward posterior pole of eye, there is a well defined gray detachment about half the size of a hazel nut. In the crown of this gray detachment, or cyst, is a glistening white body about the size of a split pea which changed its shape from day to day—from round to oblong, to dumbbell and round with a long projecting neck. There were some floating, veil-like opacities of the vitreous, a small area of swollen retina near the papilla, media otherwise clear. In the upper superior quadrant there was a well defined detachment of the retina at present showing no cysticercus or connection with the original body, but the inference is that this is a second developing cysticercus. No vision in upper field; for fingers only in lower, at distance of 10 feet. Dr. Hulen suggested the method for removal which he saw used in Paris, consisting in the use of a return current syringe, the twin nozzle of which was introduced into the detachment sack.

M. W. Fredrick: Death Following Exploratory Puncture of the Maxillary Sinus. Case of healthy man in whom a puncture was being made for the first time. The needle entered the sinus and the pus had been washed out. Air was being introduced when the patient collapsed and died immediately. Autopsy showed a slight mitral valve incompetency, but nothing to account for the death. As only a few drops of a five per cent. cocain solution with adrenalin was used, Dr. Fredrick did not consider this as a probable cause. He considered that the death was due to shock, and in the discussion it was pointed out that the unpleasant symptoms which often appeared on the introduction of air into the accessory sinuses might indicate an intolerance of the lining membrane for sudden high pressure.

Dr. Graham reported that the case exhibited at the previous meeting as a probable osteo sarcoma of the nose had been operated by Dr. Stanley Still-

man. The left superior maxilla was removed and the tumor mass found to extend through the middle of the nose to and occupying the right antrum. It was apparently entirely removed, and on section proved to be a chondro-sarcoma. Two weeks following the operation the patient was doing nicely.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. S. E. Latta, Friday evening, January 30. The following members were present: Drs. J. D. Dameron, R. B. Knight, W. F. Priestly, H. C. Peterson, W. E. Gibbons, Margaret Smyth, G. W. Walker, J. V. Craviotto, Minerva Goodman, C. F. English, L. Dozier, Hudson Smythe, Mary C. Taylor, H. E. Sanderson, S. E. Latta, F. P. Clark, C. R. Harry, Barton J. Powell, L. R. Johnson, W. W. Fitzgerald, Dewey R. Powell, E. A. Arthur, I. S. Zeimer, A. M. Tower and R. T. McGurk, with Drs. E. G. Lewis of Escalon, Max Rothschild of San Francisco, Burt Howard of Sacramento and R. D. Cashatt as guests.

The secretary read the minutes of the last regular meeting and of the special meeting held January 28. The names of Drs. Cashatt of Stockton, Lewis of Escalon, Posey of Modesto and Gould of Ripon were placed in the hands of the Committee on Admissions to be reported on at the next meeting. It was regularly moved and seconded that discussion of the cut rate fees proposed by casualty companies be deferred until after the papers had been read and discussed.

The president then called upon Dr. Max Rothschild to read his paper, "Treatment of Tuberculosis with Artificial Pneumothorax." Dr. Rothschild's paper was an excellent one. It was concise, well presented and particularly instructive. He was followed by Dr. Burt Howard of the State Tuberculosis Commission, who told of the need of better organization in the fight against tuberculosis, and requested the members to be more careful about reporting tuberculosis, and advised that a committee be appointed to encourage reporting of tuberculosis and to see what could be done about establishing a dispensary here.

The discussion was opened by Dr. H. C. Peterson, who told of the value of routine work for tuberculous patients, recalling the practices of some of the European hospitals which he had visited. The following members also took part in the discussion: Drs. Walker, Tower, Fitzgerald, English, Harry, Dozier, Dameron and D. R. Powell.

The discussion having been closed, the president called for the report of the committee appointed at the special meeting to draw resolutions relative to the fees of the casualty companies for the members and hospitals to sign. The chairman, Dr. C. R. Harry, reported that the resolutions were ready for the signatures of the members, and requested permission of the society to add to the resolutions a clause stating that any member pursuing a course contrary to the intent of the resolutions be expelled from the society. The request was granted and the resolutions were signed by all the members present.

The business of the meeting having been completed, Dr. Latta invited the members to the dining-room for refreshments.

R. T. McGURK, Secretary.

SANTA BARBARA COUNTY.

Preceded by a special dinner at the Arlington Hotel, attended by Drs. Bakewell, Barry, Brown, Flint and T. A. Stoddard, over which the latter as retiring president presided, the Santa Barbara County Medical Society met in regular annual session for the election of officers at the Arlington Hotel, January 12, 1914, at 8 p. m. The call to order came from the president, Dr. T. A. Stoddard, the secretary, Dr. Barry at his desk. Pres-

ent: Drs. Bakewell, Barry, Brown, Flint, Sidebotham, C. S. and T. A. Stoddard, and Wells—a total of eight members; no guests or visitors present.

Upon motion, a call for election of new officers for 1914 was made by the chair, resulting as follows: President, Dr. Wm. H. Flint, Santa Barbara; Vice-President, Dr. George S. Wells, Santa Barbara; Vice-Presidents at Large—Dr. George R. Lutton, Los Alamos, and Dr. Wm. T. Lucas, Santa Maria; Secretary-Treasurer, Dr. Wm. T. Barry, Santa Barbara; Delegate (to serve for two years), Dr. Benjamin Bakewell, Santa Barbara; Delegate-Alternate, Dr. T. A. Stoddard, Santa Barbara.

After transacting other business the society adjourned.

Preceded by a complimentary dinner to the members given by its newly-elected president, the Santa Barbara County Medical Society met in regular monthly session, February 9, 1914, at the Arlington Hotel, and was called to order by the president, Dr. William H. Flint, at about 8 p. m., the secretary, Dr. Wm. T. Barry, at his desk. Present: Drs. Barry, R. Brown, Cunnane, Flint, Low, C. S. Stoddard, T. A. Stoddard and Wells; guests, Drs. McFadden, Marion, Ga., Preston Miller, Baltimore, Md., and Wright, Santa Barbara—a total of eight members and three guests. The society first listened to the reading of minutes of the previous meeting, January 12, which were duly approved. The president then called for clinical cases. Dr. Rexwald Brown responded with a most improving and interesting series of reports of fractures, including those of the elbow, tibia, fibula, femur, etc. These fractures and treatment results were illustrated by upwards of a dozen fine X-ray plates. These were duly discussed by the members and guests. Dr. McFadden of Georgia made a few remarks regarding the little trouble occasioned by the presence of encysted shot in the body unless in contact with bone. A peculiar case of hemorrhage from nose and throat of obscure origin was reported by Dr. Wells. Dr. Flint mentioned a strange case of purpura in a woman coming under his professional observation, the patient registering a temperature of 104°.

The paper of the evening was then called for, and presented by Dr. Geo. R. Wells, "The Question of Freeing Nasal Passages." After the reading and discussion of this, Dr. T. A. Stoddard presented the report of the Special Fee Committee, which was approved and ordered printed. The secretary presented a communication from the Anti-Tuberculosis Society of California, and was instructed to reply thereto. The president was authorized to appoint a committee of three for revision of constitution. Dr. Flint read a letter from Mrs. Starbach, president of the Cottage Hospital Association, which received the proper attention and action. The society appointed Dr. Flint to deliver the annual commencement address February 24, when the Cottage Hospital Training School for Nurses would graduate a class. The chair announced the following standing committees, the first named being chairmen: Program and Scientific Work—Drs. Barry, Law, T. A. Stoddard; Public Health and Legislation—Drs. Bakewell, Conrad, Lucas; Censors—Drs. C. S. Stoddard, Cunnane and Wells.

Adjourned.

WILLIAM T. BARRY, Secretary.

N. B.—The coming Annual State Meeting, to convene at Potter Hotel, was duly discussed.

SOLANO COUNTY.

Resolved, That the Solano County Medical Society is in favor of State Insurance providing the compensation be adequate for the service rendered; that we do not believe the present schedule of fees adequate, and that we are opposed to all insurance that is handled by private casualty com-

panies, wherein physicians' services are contracted for.

A. V. DORAN, M. D.,
Sec'y. Solano Co. Med. Soc.

Passed at the meeting of the Solano County Medical Society held March 10, 1914, and a copy ordered sent to the State Journal.

Dr. Robert Dempsey of Vallejo was elected delegate and Dr. P. B. Fry, Benicia, alternate.

TULARE COUNTY.

The Tulare County Medical Society at its regular monthly meeting held February 10th passed the following resolution, this being, with the exception of the last paragraph, like the one passed by the Los Angeles County Medical Society:

Whereas, The State Industrial Accident Commission, in order to carry out the provisions of the recently enacted Workingmen's Compensation law of California, which is intended to safeguard the economic efficiency and prosperity of citizens engaged in industrial occupations, an object with which the ethical medical profession is in deep sympathy, as is evidenced by the service of its members in the past, in caring for many of the unfortunate sick without cost, in hospitals, dispensaries and in private practice; and

Whereas, The Industrial Accident Commission of California, in order to carry out the provisions of the above law, has found it necessary to adopt a definite and fixed medical and surgical fee table in which minimum fees are enumerated, these fees being below those in general vogue among the ethical profession of this state; and

Whereas, The ethical medical profession itself has refrained from the adoption of an arbitrary fee table because it is difficult to make a fixed charge for services in the treatment of disease and injuries, where the amount of skill and responsibility both required and given is a constantly varying factor, so that a fixed and arbitrary fee table could do injustice to both patient and physician; now, therefore, be it

Resolved, By the Tulare County Medical Society that this society, because of the above and other reasons, respectfully requests the California State Industrial Accident Commission to pass a resolution and print on the fee table they have submitted, a statement to the effect that the Commission understands fully the difficulty and inequality of an inelastic fee table for medical and surgical services, and that the minimum fees presented by the Commission are so made because of the limited resources of the State Industrial Accident Fund, and because of the comparatively small financial income of the bulk of the citizens whom the industrial law is especially intended to protect and benefit; and be it further

Resolved, That it is the opinion of the Tulare County Medical Society that some such resolution or statement of record by the California State Industrial Commission, should be made by that honorable body, lest as time goes on, an injustice be done the very profession, which, above all others in the past, has borne the brunt of aiding and helping the unfortunate sick and injured of our commonwealths; and be it further

Resolved, That the Tulare Medical Society requests the State Industrial Accident Commission to appoint each licensed physician in each community as their representative so that the patient may have his usual choice of physician.

It was also voted that the Society request its members not to sign contracts with liability insurance companies until after the meeting of the State Medical Society to be held April 14, 15 and 16, whose action would guide them.

A. W. PRESTON, Sec.

YUBA-SUTTER SOCIETY.

"Resolved, That members of the Medical Society of Yuba and Sutter Counties shall not enter

into any contract or agreement, written or verbal, with the Industrial Accident Commission of the State of California, or any Industrial Accident or Casualty Insurance Company, to render any surgical services or attendance for a consideration less than is usually charged for similar services in private practice, or that named in the schedule of prices contained in the fee bill adopted by the Medical Society of Yuba and Sutter Counties; and be it further

"Resolved, That no member of this Society shall assist or counsel with any physician who shall sign or agree to enter into any such contract or agreement."

The above and foregoing is a true and correct copy of a resolution passed and adopted by unanimous vote at a meeting of the Yuba and Sutter County Medical Society, duly and regularly held at Marysville, Yuba County, California, on January 22, 1914.

YUBA AND SUTTER COUNTY MEDICAL SOCIETY.

By A. L. MILLER,

President.

By EVERETT EDWIN GRAY,

Secretary.

BOOK REVIEWS

Diagnostic Methods. By H. T. Brooks. 8vo. Cloth. 2d Edition. Pp. 82. St. Louis. C. V. Mosby Co., Publishers. Price, \$1.00.

This book gives the standard laboratory tests. The remarks on their interpretation are just scanty and superficial enough to conduce to that slovenly and rule-of-thumb manner of working which is the bane of so many laboratories. The book is intended for "medical students, hospital internes and physicians who have a limited amount of time to give to laboratory work." These classes of workers may be strenuously urged not to use it, if their laboratory work is to be worth the doing.

L. E.

Manual of Obstetrics. By John Osborn Polak, M. Sc., M. D. D. Appleton & Co., publishers, 1913.

This handy little volume is a very good presentation of the essential facts and principles of obstetrics, and makes an excellent guide to anyone, student or practitioner, interested in the subject. It certainly fulfills the purpose for which the author wrote it.

C. B. M.

A Text-book of Physiology. By Isaac Ott. Fourth edition, revised and enlarged. F. A. Davis Company, publishers, Philadelphia, 1913. Price \$3.50.

This fourth edition is improved chiefly by additions to the physiology of the gastro-intestinal tract and of the heart. Too little attention is given the ductless glands. Consideration of the urinary secretion is given almost the same space as that allotted to the entire series of ductless glands. The book is condensed, yet easily readable. On still doubtful ground the statements of fact are conservative.

H. C. N.

The Elements of Bacteriological Technique. By J. W. H. Eyre, M. D., Director of the Bacteriological Department of Guy's Hospital, London. Second edition, rewritten and enlarged. Octavo of 518 pages, with 219 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$3 net.

The second edition of Eyre's well-known work on bacteriological technique presents some altera-

tions and additions made necessary by recent progress in this field.

This work is quite a mine of information for the bacteriological worker, covers the field of bacteriological technique quite thoroughly and is an invaluable companion. The illustrations are particularly helpful; directions are written in clear, concise English.

This book can be heartily recommended to all those interested in the study of bacteria, and this edition should surpass the well deserved circulation of its predecessor.

R. H. M.

"The Nervous and Chemical Regulators of Metabolism." Lectures by D. Noel Paton, M. D., B. Sc., Professor of Physiology in the University of Glasgow. Published by MacMillan & Co., Ltd., London, 1913. Price \$2.00.

In these days when verily there is no end to the making of books, it is a pleasure to read one so condensed and so well arranged as this one is. It covers the ground of internal secretions very much as Professor Schäfer did recently in the Lane Lectures. The fact that the author has been a steady contributor to the subject adds greatly to the value of his conclusions and his resumé of the literature.

There is one chapter on the so-called trophic influences from the central and autonomic nervous systems, and another very interesting one on the relations of internal secretion to nervous action. Recent studies have shown that these substances may act by sensitizing the sympathetic nerve endings. Lack of the secretions may entirely block the stimulus. The discussion on the interrelation of the different glands is, as usual, very interesting, and the charts on page 185 may be found convenient.

The thoughtful internist will find scattered throughout the book many suggestions for diagnosis and treatment.

W. C. A.

"A Manual of X-Ray Technic." By A. C. Christie. Published by J. B. Lippincott Co., Philadelphia and London, 1913. Price, \$2.00.

It is a pleasure to find a short book on X-ray work which is quite up-to-date and not padded with pictures of interest to the historian alone. It has been written, primarily, to help army physicians, when, on a transfer, they find themselves suddenly obliged to use X-ray apparatus. What has been included is good, and our only regret is that the book is so short. The great need today is for authentic information that will guide a man in purchasing his new outfit. X-ray salesmen are generally eligible for high office in the Ananias Club, and therefore are of little help to the poor doctors. For instance, the head of the factory that sold us our second coil assured us that there was absolutely no inverse to the wonderful machine. We humbly asked why two large valve tubes were included in the outfit and were told that that was just to help us at the beginning; when we learned how to adjust our tubes we would have no further trouble.

For good serious work the rotary transformer has come to the front and its principle is well explained in Dr. Christie's book.

Although the developer he advises may be good, it is probably better to use the formula that comes with each plate. If the manufacturer's chemists do not know what to use, nobody will.

The book is well worth the money and many men will doubtless find it more satisfying and convenient than the larger, more elaborate but less up-to-date books.

W. C. A.

"Causes and Cures of Crime." By Thomas Speed Mosby. Illustrated. Published by C. V. Mosby, St. Louis, 1913. Price, \$2.00.

A book devoted to the consideration of crime under the following headings: Cosmic Factors; Social and Individual Factors; Eugenics; Asexualization; Education; Social Amelioration; The Theory of Punishment; Indeterminate Sentence and Parole; The New Penology. Nothing very novel is presented, and the author waxes eloquent in his eulogy of Christianity as a support of morality. Many questions are stirred up that are not answered, and the opinions of many men are quoted. His proposed prevention of crime seems to be in eugenics, education—work for everybody. The penitentiary is a misnomer. What he advises is not an eye for an eye, nor death as a preventive for further crime, but moral re-education and the indeterminate sentence. The illustrations in the book engage one's attention, but the author fails to explain them. A full kit of burglar tools is depicted, but unhappily he does not instruct us as to how to use them. S. T. P.

"Studies Concerning Glycosuria and Diabetes."

By Frederick M. Allen, A. B., M. D., Published by W. M. Leonard, Boston, 1913.

In his book Allen has given us a very complete review of the literature of diabetes—perhaps the best in the English language—in addition to detailed reports of his experimental work on over 400 animals. The animal work was carried on in the Harvard Medical School, three years being devoted to the research. The first portion of his studies was devoted to the determination of sugar tolerance. His observations lead him to conclude that prolonged excesses of sugar do not lead to the production of diabetes and that the latter, therefore, cannot be due to an over production of sugar in the organism.

In the second portion of his work his results would seem to upset theories recently advanced by Noorden and his pupils as to the influence of the ductless glands on sugar metabolism in diabetes. Allen lays great stress on the part played by the nervous system in the production of diabetes and feels that in the future less is to be expected from opotherapy than from surgical measures applied to that part of the nervous system directly in control of the pancreas. Allen's book is well written and many of his conclusions, though radically different from accepted theories, appear logical.

The Practical Medicine Series. Vol. 3. Eye, Ear, Nose and Throat. Head & Mix., The Year Book Publishers, Chicago, 1913. \$1.50.

Much as one deprecates predigested, concentrated and encapsulated information, served in a modern palatable form, one cannot help but admire some of the ingenious short cuts to the literature which are offered to the profession nowadays. The present volume covers most of the important information concerning eye, ear, nose and throat literature which has appeared during the past year and will prove of great assistance to the busy specialist who likes to gain a fairly complete but superficial knowledge of the literature. As is usual in American publications of this order, little attention is paid to foreign literature, the German references, when given, are strongly suggestive of second-hand reviews. The volume is worth the price, as it saves a subscription to any one of several good special journals, which thoroughly review the same matter monthly; and at the same times gives one a fine opportunity of assuming a pseudo-acquaintance with the literature of the world by the time of the annual meetings of the State and general societies in the spring. H. H.

Infections of the Hand. A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand and Forearm. By Allen B. Kanavel, M. D., Assistant Professor of Surgery, Northwestern University Medical School, Chicago. New (2nd) edition, thoroughly revised. Octavo, 463 pages, with 147 illustrations. Cloth, \$3.75, net. Lea & Febiger, Philadelphia and New York, 1914.

This book is worthy of careful study by surgeon and general practitioner alike. Our new Working-man's Compensation Act should particularly enliven its interest to local practitioners. The harm done to wage-earners by improper recognition and treatment of affections of the hand is incalculable.

This second edition is illustrated by 147 engravings, 14 of them new. Many of the old cuts have been made more useful by an improved system of lettering and reference, many have had colors added. Were the references done away with, and the lettering of the illustrations substituted by a direct naming of the parts designated, as is done in anatomical text-books, they would leave nothing to be desired. In the chapter on treatment of felons of the distal phalanx we miss mention of the horseshoe incision carried around the tip of the finger in a plane parallel to the nail, first advocated, as far as we know, by Noeske of Kiel.

The book is one of the most important and useful of surgical monographs—we urge its wide distribution. L. E.

A Treatise on the Diseases of Women. Palmer Findley, M. D., Professor of Gynecology, State University of Nebraska. First edition, 1913. One volume, 954 pages, 632 engravings, 38 plates. Price, \$6.00. Lea and Febiger, Philadelphia and New York.

It is an appropriate sequel to the author's "Diagnosis of Diseases of Women." In a lucid manner the author makes clear many of the perplexing problems of gynecology. The book reflects the ability of its writer to elucidate his subject which has always been accredited to him during his teaching career. Owing to conservation of words Dr. Findley has been able to include practically all of the important elements in the treatment of the disorders of women, and also much pathology with the salient facts in diagnosis, in one volume.

We highly recommend the book to undergraduate students on account of its clear text and vivid illustrations, and to practitioners owing to its thoroughness and description of the latest methods employed in gynecology.

The publishers deserve credit for such a publication. Its well printed pages with large type and ample margins contain as few errors as will be encountered in any work of this kind, all of which make the reading from a master's pen a pleasant task.

H. EDWARD CASTLE.

Case Histories in Pediatrics. A collection of histories of actual patients selected to illustrate the diagnosis, prognosis and treatment of the diseases of infancy and childhood, with an introductory section on the normal development and physical examination of infants and children. By John Lovett Morse, A. M., M. D., Associate Professor of Pediatrics, Harvard Medical School; Associate Visiting Physician at the Infants' Hospital and at the Children's Hospital, Boston. Second edition. W. M. Leonard, publisher, Boston, 1913.

The first edition of this admirable work was reviewed in the issue of the Journal for July, 1911. It is with pleasure that we see the shape which the second edition has taken. The number of case histories has been doubled and covers the subject

of pediatrics more fully than did the first edition. The histories are in most readable form and the method of discussing diagnosis and treatment and prognosis is most stimulating and should be of great value not only to students but especially to practitioners. The introductory chapter on the normal development and physical examination of infants and children is certainly a small book in itself and worthy of most considerate and attentive study. The illustrations are good and very practical, which is more than can be said of the illustrations in a great many text books on pediatrics. The long experience of Dr. Morse is well shown in the wide variety of cases whose histories are given. The index is very well gotten up and should be most useful to the busy practitioner. In every way this book is a most serviceable book for the general medical practitioner and certainly to every practitioner who is interested in children's work. Any one will find it most interesting and stimulating to read over Dr. Morse's analysis of his cases.

W. P. L.

W. B. Saunders Company, publishers of Philadelphia and London, have just issued an entirely new eighty-eight page illustrated catalogue of their publications. As great care has evidently been taken in its production as in the manufacture of their books. It is a descriptive catalogue, telling you just what you will find in their books and showing you by specimen cuts, the type of illustrations used. It is really an index to modern medical literature, describing some 250 books, including 30 new books and new editions. A postal sent to W. B. Saunders Company, Philadelphia, will bring you a copy—and you should have one.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(This Department will be pleased to supply information concerning products passed or rejected by the Council on Pharmacy and Chemistry of the A. M. A., or submit queries to the Council when information is not available.)

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Radium and Radium Salts.—Radium is used in medicine in the form of its chloride, bromide, sulphate and carbonate. The therapeutic value of radium salts depends on the emanations which are given off from the radium. Radium emanation consists of alpha-rays, beta-rays and gamma-rays, the latter being similar to X-rays and therapeutically the most useful. The quantity and concentration of radium emanations are expressed in terms of "curie" and Mache units. A "curie" is the amount of emanation in equilibrium with 1 Gm. of radium and a microcurie is one millionth of a "curie." A microcurie is equivalent to about 2,500 Mache units. It has been claimed that radium emanation is of value in all forms of non-suppurative, acute, subacute and chronic arthritis, in chronic muscle and joint rheumatism, in arthritis deformans, acute and chronic gout, neuralgia, sciatica, lumbago and in tabes dorsalis for the relief of lancinating pains. Its chief value is in the relief of pain. Surgically marked results are ob-

tained in the removal of epitheliomata, birthmarks and scars. Radium may be administered in baths, by subcutaneous injection in the neighborhood of an involved joint (0.25 to 0.5 microcurie in 1 or 2 Cc. distilled water), by local application as compresses (5-10 microcuries), by mouth as a drink cure (in increasing doses of from 1-10 to 10 microcuries three or more times a day), by inhalation, the patient for two hours daily remaining in the emanatorium, which contains 0.0025 to 0.25 (average 0.1) microcurie per liter of air.

Radium Chloride.—Radium chloride is supplied in the form of a mixture of radium chloride and barium chloride, and is sold on the basis of its radium content. Radium Chloride—Standard Chemical Co., Radium Chemical Co., Pittsburg, Pa.

Radium Sulphate.—Radium sulphate is supplied in the form of a mixture of radium sulphate and barium sulphate and is sold on the basis of its radium content. Radium Sulphate—Standard Chemical Co., Radium Chemical Co., Pittsburg, Pa. (Jour. A. M. A., Jan. 3, 1914, p. 41).

Sodium Acid Phosphate.—Sodium Acid phosphate (Sodii Phosphas Acidi), $\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$, is the monosodium dihydrogen salt of orthophosphoric acid, containing not less than 82 per cent. of anhydrous sodium acid phosphate. Sodium acid phosphate is administered to render the urine acid or to increase its acidity. It is used for this purpose to assist the action of hexamethylenamin which is effective only in acid urine. It should be given so that it has left the stomach before the hexamethylenamin is given. Non-proprietary preparations: Sodium Acid Phosphate, M. C. W., The Mallinckrodt Chemical Works, St. Louis Mo.; Sodium Phosphate, Monobasic, P. W. R., The Powers-Weightman-Rosengarten Co., Philadelphia, Pa. (Jour. A. M. A., Jan. 10, 1914, p. 127).

Slee's Refined and Concentrated Tetanus Antitoxin (Globulin Solution).—For description of Tetanus Antitoxin see N. N. R., 1913, p. 218. Abbott Alkaloidal Co., Chicago.

Slee's Normal Horse Serum.—For description of Normal Horse Serum see N. N. R., 1913, p. 236. Abbott Alkaloidal Co., Chicago (Jour. A. M. A., Jan. 10, 1914, p. 128).

Ampoules Emetine Hydrochloride, P., D. & Co.—Each ampoule contains emetine hydrochloride 0.02 Gm. Parke, Davis & Co., Detroit, Mich. (Jour. A. M. A., Jan. 10, 1914, p. 128).

Phenolsulphonephthalein.—A product differing chemically from phenolphthalein in that a carbonyl group of the latter has been replaced by a sulphone group. Phenolsulphonephthalein is used to determine the functional activity of the kidneys. It is injected intramuscularly or intravenously and its rate of excretion determined colorimetrically. Phenolsulphonephthalein is a red powder which yields a deep red solution with water or alcohol containing an alkali.

Phenolsulphonephthalein, H. W. & Co.—Made by a special process and said to be exceptionally pure. Hynson, Westcott & Co., Baltimore, Md.

Phenolsulphonephthalein Ampoules.—Each contains a solution of 0.006 Gm. phenolsulphonephthalein, in the form of the monosodium salts. Hynson, Westcott & Co., Baltimore, Md.

Sterile Ampoules of Mercury Salicylate.—Each contains 0.06 Gm. of mercury salicylate N. N. R., suspended in a vegetable fat. Hynson, Westcott & Co., Baltimore, Md.

Salvarsan-Ehrlich, Suspension in Ampoules.—Each contains 0.1 Gm. of salvarsan, suspended in a vegetable fat. Hynson, Westcott & Co., Baltimore, Md.

Neosalvarsan-Ehrlich, Suspension in Ampoules.—Each contains 0.15 Gm. neosalvarsan suspended in a vegetable fat. Hynson, Westcott & Co., Baltimore, Md. (Jour. A. M. A., Jan. 24, 1914, pp. 297 and 298).

Elarson.—Flarson is the strontium salt of chlorarsenobenzoic acid, containing about 13 per cent.

of arsenic and about 6 per cent. of chlorin. It has the action of arsenic, but the arsenic being in lipoid-like combination is said to be better utilized and to exert its therapeutic effects in smaller doses than other organic arsenical preparations. Also, it is said to produce relatively little gastric irritation. It is sold only in the form of Elarson tablets. The Bayer Co., New York (Jour. A. M. A., Jan. 31, 1914, p. 379).

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Serobacterins.—Serobacterins are emulsions of bacteria which have been treated by the application of the corresponding specific immune serum. Bacteria as treated are supposed to contain specific amboceptors, so that immediate union with the complement of the patient's serum is said to occur. Hence, their action is supposed to be more rapid than that of ordinary vaccines. They are also said to be free from the negative phase and the general and local reactions produced by ordinary vaccines.

Staphylo-Serobacterin, Mulford.—This is a sensitized Staphylococcic Vaccine. H. K. Mulford Co., Philadelphia, Pa.

Strepto-Serobacterin, Mulford.—This is a sensitized Streptococcic Vaccine. H. K. Mulford Co., Philadelphia, Pa.

Typho-Serobacterin, Mulford.—This is a sensitized Typhoid Vaccine. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Feb. 7, 1914, p. 457).

Disinfectant Krellos, Mulford.—A solution of cresols or higher phenol homologues and rosin soap. The phenol coefficient, ranging from 5 to 7, is stated on the label. It is an antiseptic, germicide and deodorant. Mulford Antiseptic Krellos is an almost black liquid, having a cresol-like odor forming a milk-like emulsion with water. The H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Feb. 14, 1914, p. 537).

Anti-Anthrax Serum, Mulford.—It is prepared by immunizing horses against virulent anthrax bacilli. H. K. Mulford Co., Philadelphia, Pa.

Antistreptococcic Serum Scarlatinal, Polyvalent, Mulford.—The serum of horses treated with streptococci taken from scarlet fever patients. The H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Feb. 14, 1914, p. 537).

Corpus Luteum, Capsules.—Each capsule contains desiccated corpus luteum, Armour 0.3 Gm. Armour & Co., Chicago.

Corpus Luteum Tablets.—Each tablet contains desiccated corpus luteum, Armour 0.13 Gm. Armour & Co., Chicago (Jour. A. M. A., Feb. 21, 1914, p. 615).

Granular Effervescent Salicylos.—Each 100 Gm. contain strontium salicylate 6.54 Gm., ammonium salicylate 6.54 Gm. with an effervescing base of sodium bicarbonate, citric acid and tartaric acid. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Feb. 21, 1914, p. 615).

Amphotropin.—Hexamethylenamin camphorate, a compound of hexamethylenamin and camphoric acid. It combines the action of camphoric acid and hexamethylenamin, but is claimed to be free from the subjective gastric disturbances produced by camphoric acid and to be effective in smaller doses. It may be given dissolved in water or as Amphotropin Tablets containing 0.5 Gm. Farbwerke Hoechst Co., New York (Jour. A. M. A., Feb. 28, 1914, p. 697).

PROPAGANDA FOR REFORM.

Sal Hepatica.—Sal Hepatica, marketed by the Bristol-Myers Co., New York, has been refused recognition by the Council on Pharmacy and Chemistry because its composition is secret; because it is advertised indirectly to the public for the treatment of diseases; because exaggerated and unwarranted claims are made for its therapeutic qualities and because its name fails to indicate its chief constituents, but does suggest its use in liver disorders. The Council authorized publication of its report because the exploitation of Sal Hepatica is an important illustration of the way in which physicians are being made parties to the introduction to the public of a patent medicine, the indiscriminate use of which must often have resulted in harm, direct or indirect (Jour. A. M. A., Feb. 7, 1914, p. 472).

Orrin Robertson and His Seven Sacred Oils.—Robertson is a quack, at present located at Arkansas City, Kansas, who claims to remove gall-stones by means of "Seven Sacred Oils which grow in seven different climes." For the oil he claims "One oil acts specifically upon the entire head and throat. One oil acts directly upon the esophagus. One oil acts directly upon the stomach." And so it goes, each oil acting a little lower down, until we reach the seventh oil which "acts directly" on the rectum. Robertson also exploits a cure for cancer (Jour. A. M. A., Feb. 7, 1914, p. 473).

Mu-col.—"Mu-col for Cleansing Mucous Membranes" is a nostrum put out by the Mu-col Company (Inc.), Buffalo, N. Y. The following claims are made: "Mu-col obtains most gratifying results in catarrhal inflammations of the mucous membranes. Leucorrhea, Tonsillitis, Sore Throat, Cystitis, Internal Hemorrhoids, Nasal Catarrh and Pus Cases respond at once to irrigations with Mu-col solution. Strong solutions of Mu-col have proven of sterling value in treating Hives, Prickly Heat, Ivy Poison, Sunburn, Eczema, Typhoid and Scarlet Fever." Examination in the A. M. A. Chemical Laboratory showed Mu-col to be a mixture of sodium chlorid and borax, equal parts, with the addition of a small amount of aromatic substances (Jour. A. M. A., Feb. 7, 1914, p. 474).

Piorkowski Laboratories Not Licensed.—The Public Health Service announces that statements which seem to emanate from the so-called Piorkowski Laboratories in various parts of the country to the effect that these laboratories have been licensed by the U. S. Public Health Service are incorrect. Instead, after inspection, a license has been refused the Piorkowski Laboratories of Berlin, Germany (Jour. A. M. A., Feb. 14, 1914, p. 553).

Pyo-atoxin.—A box of Pyo-atoxin was submitted to the A. M. A. Chemical Laboratory for examination. The box contained thirty black capsules, having the appearance of some of the popular gonorrhea nostrums. While the synonym "Pheno-Methylene-Formate" suggested that Pyo-atoxin was a definite chemical substance, the examination indicated that the powder contained in the capsules was a mixture of hexamethylenamin and methylene blue—two well-known drugs, the value and limitations of which are known to the medical profession. Pyo-atoxin is sold by H. O. Hurley, Louisville, Ky., and is said to be "An Antitoxin Agent Indicated in Gonorrhea, Cystitis, Pyelitis and Bacteriuric Conditions" (Jour. A. M. A., Feb. 14, 1914, p. 552).

Hex-a-lith.—Hex-a-lith put out by the Smith-Dorsey Co., Lincoln Neb., is said to be a combination of hexamethylenamin and lithium citrate. As lithium citrate has a tendency to render the urine alkaline and since hexamethylenamin acts only in an acid medium, the constituents of this preparation are physiologically incompatible (Jour. A. M. A., Feb. 14, 1914, p. 555).

When is a Patent Medicine?—While some physicians, and especially some medical journals,

have trouble in classifying certain proprietary medicines, drug departments in department stores find the problem a simple one. In recent Chicago newspapers advertisements for Fellow's Syrup of Hypophosphites, Glycethymoline and Sal Hepatica look perfectly at home with Peruna, Circus Lini-ment and Beecham's Pills (Jour. A. M. A., Feb. 21, 1914, p. 631).

Lucile Kimball Obesity Cure.—Lucile Kimball of Chicago comes to the obese with the message "I can make your fat vanish by the gallon." All that is needed, she says, is to take her treatment—no dieting, exercise or drugs are needed. The treatment consists of pink pills, which are reported to contain red pepper, menthol and bitters, probably gentian or quassia; brown tablets which the chemists declared to be an old-fashioned cathartic pill, and a powder, reported to consist of soap, Epsom salt and washing soda (Jour. A. M. A., Feb. 21, 1914, p. 631).

Louisenbad Reduction Salt.—This is a white powder sold by Karl Landshut, Chicago, and is to be used dissolved in a bath. The A. M. A. Chemical Laboratory reported the powder to be composed of sodium sulphate, sodium chlorid and potassium chlorid. It is hardly necessary to say that taking a bath in a tubful of water in which a tablespoonful of the mixture has been dissolved would have no other effect than that obtained from bathing in the same amount of water without the mixture (Jour. A. M. A., Feb. 21, 1914, p. 632).

Effect of Tartrates.—Many of the organic acids, such as citric and acetic, are burned up in the body, giving rise to carbon dioxid and water; thus sodium citrate, for instance, acts just like sodium carbonate in the organism. On the other hand tartaric acid and its salts are, for the most part, not destroyed in the body and leave it in their original form, and animal experiments have shown that large doses of tartrates may give rise to symptoms of nephritis. However, while the claim made for a certain baking powder that the tartaric acid of cream of tartar in it is "wholesome" is evidently unwarranted. W. Post has shown that in the doses in which tartrates in the form of purgative mixtures, etc., is ordinarily given, are probably without harmful effects (Jour. A. M. A., Feb. 21, 1914, p. 616).

Administration of Lecithin.—It has been shown many times that phosphorus in the form of organic compounds as it occurs in milk or in eggs probably changes in the body to phosphate and is subsequently elaborated into lecithin. In view of this there would seem to be no physiologic or biologic reason for preferring isolated lecithin as a medicament to milk or eggs. If it is believed that lecithin is indicated, the administration of one or two raw, or even cooked, yolks of eggs will supply all the lecithin that could be metabolized and presents it in a better manner than an artificial preparation (Jour. A. M. A., Feb. 21, 1914, p. 615).

Every Woman's Flesh Reducer.—This obesity treatment is sold by the Every Woman Company, Chicago, Ill., and is a white powder smelling strongly of camphor and is of the bath-powder type. Examination in the A. M. A. Chemical Laboratory indicated the powder to be a mixture of alum, Epsom salt with an effervescing base of citric acid and sodium bicarbonate or possibly sodium carbonate with a small amount of camphor (Jour. A. M. A., Feb. 28, 1914, p. 714).

"Get Slim."—Jean Downs, New York, offers to reduce the obese with "a purely vegetable, pleasant, healthy drink." A box of "Get Slim" was examined in the A. M. A. Chemical Laboratory. It contained 15 large envelopes, the same number of smaller envelopes and a package of powder. The large envelopes appeared to contain only sugar tinted pink. The contents of the smaller envelopes appeared to be tartaric acid, also tinted pink. The white powder was concluded to be sodium bicar-

bonate only. The sugar and tartaric acid powders are to be made into lemonade with the addition of lemon. The bicarbonate of soda is dissolved and the solution taken before meals (Jour. A. M. A., Feb. 28, 1914, p. 715).

Pam-ala, Another Worthless Quinin Substitute.—According to advertisements Pam-ala, sold by the Pam-ala Company, New York, is "A new and efficient remedy for Malaria." Its general characters, particularly its cumin-like smell, and also the advertising claims are very similar to Sinkina, a preparation which was shown to be worthless. Most of the testimonials sent out are rather old and are stated to come from physicians in Italy, Cuba, Porto Rico, Guatemala, etc. Two recent testimonials from physicians in the United States were investigated by this Council on Pharmacy and Chemistry and in each case it was found that the opinions had been based on insufficient trials and that the physicians on further use of Pam-ala had become convinced of its inefficiency. While the evidence indicated that the essential constituent of Pam-ala is oil of cumin, proven worthless in the investigation of Sikina, a chemical analysis was not made by the Council because it was thought that the secrecy with which the identity of Pam-ala was surrounded and the extravagant and highly improbable claims were sufficient to condemn it (Jour. A. M. A., Feb. 28, 1914, p. 715).

The Action of Hexamethylenamin.—It has been shown by Hanzlik and Collins that hexamethylenamin can act in body fluids which are acid in reaction, namely, the gastric juice and the urine. The only part of the body in which hexamethylenamin may be expected to exert an antiseptic action is in the urinary tract, and then only if the urine is acid. If the urine is not acid already sodium acid phosphate should be administered to render it so. The administration of sodium or potassium acetate or citrate, in sufficient quantity, will render an acid urine alkaline and inhibit the action of hexamethylenamin (Jour. A. M. A., Jan. 3, 1914, p. 43).

Odor-o-no.—Odor-o-no, The Odorono Company, Cincinnati, Ohio, is sold as the "anti dress-shield toilet water." It is claimed to eliminate excessive perspiration and to be absolutely harmless. Confirming the analysis made by the Indiana state chemists some time ago, the A. M. A. Chemical Laboratory reports that now, as when examined before, Odor-o-no is a strong solution of aluminum chloride. When this solution is applied to the skin, it will be decomposed by the perspiration into free hydrochloric acid which will attack and irritate the skin, and aluminum hydroxide which tends to clog up the pores (Jour. A. M. A., Jan. 3, 1914, p. 54).

Hydrocyanate of Iron, Tilden.—While from the name one would judge Hydrocyanate of Iron, Tilden, to be a cyanide of iron, analysis in the A. M. A. Chemical Laboratory has demonstrated the preparation to consist essentially of equal parts of talc and Prussian blue, with traces of organic matter having the properties of alkaloids. Prussian blue is a remedy that has been used for epilepsv and found wanting (Jour. A. M. A., Jan. 3, 1914, p. 58).

The Quality of Sodium Acid Phosphate.—As it appears probable that the use of sodium acid phosphate will increase and since previous experience has emphasized the unreliability of little used drugs, the A. M. A. Chemical Laboratory deemed it important to examine the market supply. While the official sodium phosphate may be obtained of exceptional purity, the examination showed that the market supply of sodium acid phosphate was decidedly variable and much less pure, although not seriously impure. Based on the examination the laboratory proposed standards which were thought fair, both to those who make it and those who use it in their practice. The examination showed the product of the Mallinckrodt Chemical

Works and of the Powers-Weightman-Rosengarten Company to comply with the proposed standards. Acting on the report of the laboratory, the Council on Pharmacy and Chemistry decided to describe sodium acid phosphate in New and Nonofficial Remedies and, having adopted the proposed standards of purity, accepted the two brands named for inclusion with N. N. R. (Jour. A. M. A., Jan. 10, 1914, p. 142).

Hypo-Quinidol.—While no definite statements appear to be contained in the advertising matter sent out by R. W. Gardner, certain statements suggest that Hypo-Quinidol might be some sort of a quinin hypophosphite preparation. But if this is true, its action would be the same as other salts of quinin and the extravagant claims made could not be substantiated. Hypo-Quinidol is a preparation the composition of which is secret and for which highly improbable claims are made (Jour. A. M. A., Jan. 10, 1914, p. 148).

The Richie Morphine Cure.—The Richie Company was discussed in Collier's Great American Fraud series as one of the concerns which under the guise of mail-order "cures" for the morphine habit fosters the slavery of the drug habit by substituting for the morphine addiction an addiction to their villainous mixtures of opiates. More recently shipments of the Richie "cure" were seized by the Federal authorities and found on analysis to contain from 7.21 grains to 15.95 grains of morphine sulphate to the fluidounce (Jour. A. M. A., Jan. 10, 1914, p. 144).

Radium in Carcinoma.—Sparmann reports on the after-history of fifty-three cases of carcinoma treated with radium. Of these eleven have died since the treatment, in six the tumor has disappeared, in five the condition seems improved, in seven the condition is aggravated and in the others the treatment was not continued because the condition of the patients had become worse. While these results show that radium is a remedy of use in the treatment of cancer it is not a sovereign remedy as some enthusiastic reports would have us believe (Jour. A. M. A., Jan. 17, 1914, p. 212).

Expurgo Anti-Diabetes.—The claim made for Expurgo Anti-Diabetes (sold in Canada as Sanol Anti-Diabetes) that it is "the only positive cure for diabetes" and others of this character should be sufficient to condemn it. Nevertheless medical journals advertise it and physicians have been found to give testimonials for it. Examination in the A. M. A. Chemical Laboratory showed that Expurgo Anti-Diabetes is essentially a watery solution of plant extractives with small quantities of sodium salicylate and salt. The exploiters claim that their stuff contains the fruit and bark of jambul, rosemary, star anise and fluid extract of calamus, cinchona, cola, condurango and gentian. One of the claimed ingredients, jambul, was in vogue as a remedy for diabetes some years ago. It was tried and found wanting and relegated to the therapeutic scrap heap (Jour. A. M. A., Jan. 24, 1914, p. 312).

Case's Rheumatic Specific.—This is a "patent medicine" sold under the inferential claim that it does not contain salicylate. A package bearing the statement that this medicine "cures where all else fails rheumatism, muscular, sciatica, lumbago, gout, neuralgia, neuritis," contained one box of "Rheumatic and Gout Pills" and one of "Bilious and Liver Tablets." Examination in the A. M. A. Chemical Laboratory showed the first to contain sodium salicylate with some magnesium oxid and licorice root, while the second was found to contain aloin or some preparation of aloes as the purgative constituent (Jour. A. M. A., Jan. 31, 1914, p. 394).

Lactic Acid Ferment Preparations in N. N. R.—Assertions that the lactic acid ferment preparations on the market are worthless caused the Council of Pharmacy and Chemistry to examine those ad-

mitted to N. N. R. While past examinations showed this class of preparations to be most unreliable, the present market supply was found to be satisfactory. The products examined were Fairchild Culture of *Bacillus Bulgaricus*, Lactic Baccillary Tablets, Fairchild, Lactampoules, Fairchild, Baccillary Milk, Fairchild, Bulgaria Tablets, H. W. Co., Massolin, Schieffelin. (Jour. A. M. A., Dec. 6, 1913, p. 2084).

Sanatogen.—The fundamental objection to Sanatogen is not its outrageously high price, but the attempt to ascribe to a mixture of casein and glycerophosphate powers not possessed by these ingredients. The claim that Sanatogen is a "nerve food" is an absurdity as is any claim that the casein in Sanatogen has a greater food value than the casein in ordinary milk. Physicians who have given fulsome puffs for Sanatogen are invited to study the claims which are made for it, the following being one: ". . . it revivifies the nerves, promoting sleep and helping digestion . . ." (Jour. A. M. A., Dec. 6, 1913, p. 2085).

The Value of Echinacea.—While most extravagant claims are made for the drug, the Council on Pharmacy and Chemistry concludes that, on the basis of the available evidence, echinacea is not entitled to be described in New and Nonofficial Remedies as a drug of probable value (Jour. A. M. A., Dec. 6, 1913, p. 2088).

Texas Guinan.—The Texas Guinan World-Famed Treatment for Corpulency (Texas Guinan Co., Los Angeles, Cal.), appears to be the latest venture of W. C. Cunningham, of Marjorie Hamilton's Obesity Cure fame. It is exploited by follow-up letters giving the experiences of Texas Guinan, an actress, and offering the preparation at a sliding scale of prices, ranging from twenty down to three dollars. From an analysis made in the A. M. A. Chemical Laboratory it appears that an essentially similar preparation may be obtained by mixing one pound of powdered alum with ten ounces of alcohol and enough water to make one quart. A second specimen which was examined in the Association's Laboratory contained no alum or alcohol and appeared to be a tragacanth preparation of the "vanishing lotion" type (Jour. A. M. A., Dec. 13, 1913, p. 2173).

Colloidal Palladium.—A preparation of colloidal palladium, under the proprietary name Leptynol, is proposed as a means of causing the absorption of adipose tissue. The preparation appears one of the many thousand proprietaries produced abroad in the past year and put on the market after meager experimental work (Jour. A. M. A., Dec. 13, 1913, p. 2179).

Dowd's Phosphatometer.—According to its inventor this is a device "for taking the phosphatic index or pulse of the nervous system." Its originator, Dr. J. Henry Dowd, M. D., Buffalo, N. Y., writes enthusiastically of his instrument and of "Comp. Phosphorus Tonic." The phosphatometer is a scientific absurdity which pretends to determine the amount of phosphate in the urine and thus to measure "nerve metabolism" (Jour. A. M. A., Dec. 20, 1913, p. 2258).

Another "Cancer Cure."—Denver newspapers advertise that the International Skin and Cancer Institute of Denver claims to have a cure for cancer. The "cure" is exploited by one John D. Alkire. No doubt those afflicted with cancer, and those who believe themselves afflicted with cancer, will flock to Denver for the "cure." The actual victims of the disease will of course die, but there will be the usual number of recoveries from non-malignant sores that will be heralded as "cures," and thus will make the venture a profitable one. To the honor of Denver it may be said that some of its newspapers refused the advertisement (Jour. A. M. A., Dec. 20, 1913, p. 2248).

The Ready Reckoner.—The attempt of a proprietary exploiter to pose as the physician's post-graduate instructor comes from the promoter of a

"blood stimulating" preparation—Hemaboloids Arseniated (with Strychnia). It is in the form of a ready reckoner for the diagnosis of pathologic sputum. The thing consists of a revolving arrow, surrounded by circles containing illustrations of bacteria such as no human eye ever saw through a microscope. The physician apparently is expected to point the arrow to what he sees, or thinks he sees, in the microscope, and then, through a window in the tail of the arrow, observe the name of the organism and the disease which it produces. The device is an insult to intelligent physicians and belongs in the waste-basket (Jour. A. M. A., Dec. 27, 1913, p. 2306).

Pa-Pay-Ans (Bell).—An analysis, included with the report of the Council on Pharmacy and Chemistry rejecting the product, failed to find one of the constituents claimed to be present in the preparation—the constituent after which the medicine appears to have been named, namely, papain (Jour. A. M. A., Dec. 27, 1913, p. 2314).

ATOPHAN NOT A FRAUD.

Some notes on various things medical are prepared by the Journal A. M. A. and sent out to a number of the State Journals; they are given the heading "Propaganda for Reform." As the editor does not like the word "propaganda" he changed the title of the notes to "Interesting Frauds," for most of the items related to frauds, nostrums, etc., and he did not notice that there was a small note on Atophan amongst those published in the February issue of the Journal. Several people have been more or less exercised in their minds over this slight error, but they might have reassured themselves if they had looked in the advertising pages where they would have found the advertisement of Atophan. As this Journal does not carry fraudulent ads, they would have known there was an accident somewhere.

REPORT OF THE BUREAU OF THE HYGIENIC LABORATORY.

By WILBUR A. SAWYER, M. D., Director.

Ozone Machines:

Several electrical machines are on the market which have for their purpose the conversion of the ordinary oxygen of the air into ozone. These machines are put out by companies which claim for ozone in breathed air health giving and bactericidal powers. Experiments being carried on in the State Hygienic Laboratory show that the products of one of the best known of these machines will kill guinea-pigs before they will destroy bacteria. Therefore, the machine is worthless as far as its sterilizing effect on breathable air is concerned. The principal physiological effect on normal human beings is an undesirable irritation of the respiratory tract. This leaves to the machine only one purpose in the public places in which they are being installed, and that is the concealment of unpleasant odors. As the machines interfere with the public's power to notice the condition of the air which they are breathing, such equipment abets the evasion of furnishing proper ventilation. The presence of an ozone machine in a public place, therefore, shows that there is something to be concealed about the air furnished. The ozone machine, when intended for alteration of air in the presence of human beings, has no legitimate claim to be a hygienic device, but it is rather a cover for those who wish to evade the laws of hygiene.

EXTENSION LECTURES FOR COUNTY MEDICAL SOCIETIES.

In response to a need quite frequently expressed, the faculty of the San Francisco Polyclinic and

Post Graduate School has arranged for the delivery of a number of lectures on subjects of immediate medical and surgical interest. We append herewith a list of the same, any one of which is available gratis, to County Societies of this State. In the case of such Society being more than 50 miles distant from San Francisco, it is expected that the traveling expenses of the lecturer be paid by the Society calling upon him.

It has been the aim of our colleagues in choosing the subjects of their lectures to confine themselves to themes of practical value to the general practitioner.

Medicine.

- Brown, Philip King
Tuberculosis—Mode of Infection and Spread. Illustrated with X-ray plates.
- Cerebro-spinal Syphilis—Diagnosis and Treatment.
- Intestinal Adhesions—Cause, Symptoms, Treatment.
- Power, H. D'Arcy
Treatment of Stomach and Intestines in the Light of Modern Physiology.
What and How Much Shall We Eat?
Functional Disorders of the Myocardium.
- Shiels, J. Wilson
Thoracic Aneurisms—Diagnosis.
Difficulties of Differential Diagnosis in Upper Abdominal Disorders.
- Mace, Lewis S.
Artificial Pneumothorax.
Use of Tuberculin.
X-Ray Plates in Diagnosis of Early Tuberculosis.
- Goldman, S. A.
Malaria and Its Complications.
- Taibles, G. H.
Some New Points in Diagnosis and Treatment of Scarletina.
Use of Thyroid Extract.
Organotherapy in Thyroid Disease.
- Williams, Francis B.
Practical Anesthesia.

Pediatrics.

- Burrows, Fred G.
Diagnosis of the Exanthemata.

Neurology.

- Beerman, Wilfred
Newer Methods of Diagnosis and Treatment of the Diseases of Nervous System.
Brain and Spinal Cord Tumors.
Hysterical Paralysis.

Surgery.

- Levinson, Chas. G.
Technique of Operations on the Brain.
Technique of Gastro-enterostomy.
Technique of Surgery of Gall Bladder.
- Barrett, Gilbert
Infection of the Hand.
Local Anesthesia in Surgery.
Closure of Abdominal Parietes after Drainage Operations.
- Russell, Tracy G.
Gall Bladder Operations.
Intestinal Adhesions.
- Sherman, Harry M.
Fractures.
The Normal Abdomen, from the Surgeon's Standpoint.
- Ryfkogel, H. A. L.
Cancer of Tongue and Lip.
Malignant and Tuberculous Cervical Glands—Diagnosis and Treatment.
Goitre, Surgical Treatment.

Gynecology.

- Kreutzmann, H. J.
X-Ray, Radium and Mesothorium Treatment of Affections of the Female Genitalia.
- Teass, C. J.
Gonorrhea in the Female Procidntia.
Points in Pelvic Diagnosis.

Eye.

- Conlan, F. J.
 Dangerous Eye Conditions in General Practice.
 Refraction, Importance to the General Practitioner.
 The Ophthalmoscope in Diagnosis.
- Kerschbaumer, R.
 Relation of Eye Diseases to General Conditions.
 Eye Diseases in School Children.

Orthopedics.

- Watkins, Jas. T.
 Modern Treatment of Spinal Tuberculosis.
 Ununited Fractures.
 Orthopedic Treatment of Arthritis.
- McChesney, Geo. J.
 Scoliosis Treatment with Special reference to the Abbott Method.
 Hip Disease—Diagnosis and Treatment.
 Infantile Paralysis—Diagnosis and Treatment.
- Gottlieb, H.
 Plaster of Paris—Its Use and Abuse.
 How to Shoe the Foot.
 Contact between Orthopedics and Urology.

Ear, Nose, Throat.

- Welty, Cullen.
 Suppurative Otitis-Media Indications for Operative Interference.
 Reflex Neuroses, such as Neuralgias, Headaches and Asthma—dependent on Nasal Malformation.
- When to Operate in Acute Mastoiditis.
- Wagner, H. L.
 Diagnosis of Various Sore Throats and Their Treatment.
 What Shall the General Practitioner Know of and Do in Ear Drum Disturbances, Showing Method of Ear Drum Paracentesis.
 Indications and Various Methods of Removal of Adenoids, with Demonstration.
- Horn, Henry.
 Stuttering and other Speech Defects, Prevention and Treatment.
 Bronchoscope—Its Use in Modern Medicine, With Demonstration.
 Accessory Nasal Sinuses—Their Diagnosis and Treatment.

Skin.

- Chipman, Ernest D.
 Everyday Skin Diseases—Diagnosis and Treatment.
 Skin Diseases of Infancy.
 Parasitic Skin Diseases.

Rectal Diseases.

- Zobel, A. J.
 Local Anesthesia in Ano-Rectal Surgery.
 Value of Procto-Sigmoidoscopy in Diagnosis.
 Some of the more common Ano-Rectal Diseases seen in everyday practice.

LORD LISTER MEMORIAL.

City Chambers

Glasgow, 27th January, 1914.

Dr. T. W. Huntington,
 San Francisco.

My Dear Sir:

As Honorary Treasurer for the Lord Lister Memorial Fund, I have received from Dr. Keen of Philadelphia, the contributions he has collected on behalf of this movement. He tells me that you have been of great assistance to him in stimulating interest in San Francisco, and I desire, on behalf of the Committee, to thank you most cordially for your kind cooperation in this laudable cause. The Committee here have been greatly gratified by the support which the movement has received, not only in the United States, but in all parts of the world, where Lord Lister's pupils are settled, and where the name of the great surgeon is revered and loved.

With renewed thanks, I am yours faithfully,

(Signed) JOHN S. SAMUEL.

Hon. Treas.

75 Harley Street, Cavendish Square, W.
 27th January, 1914.

Dear Dr. Huntington:

I have to thank you very much on behalf of the Lister Memorial Fund for the great trouble you have taken in collecting subscriptions for the Fund. It has been a great help and encouragement to us to find that the American surgeons are so cordial.

Yours sincerely,

(Signed) W. WATSON CHEYNE.

NEW MEMBERS.

Nutting, C. W., Etna Mills, Cal.
 Stovall, Leonard, Los Angeles.
 Conerty, Jas. M., Los Angeles.
 Edwards, H. W., Los Angeles.
 Anderson, Jennie H., Los Angeles.
 Phillips, C. E., Los Angeles.
 Allen, Albert, Los Angeles.
 Strong, A. E., Riverside.
 Bowen, D. S., Los Angeles.
 Hare, Jessie D., Fresno, Cal.
 Jones, Jr., Robert Melvin, Fresno, Cal.
 Murayama, M., Fresno, Cal.
 Walsh, J. F., Eureka, Cal.
 Barmore, W. A., San Francisco.
 Dillon, Jas. R., San Francisco.
 Thorpe, T. F., San Juan Bautista.
 Turner, G. Burton, San Francisco.
 Rockwell, Oroville, Cal.
 Hadley, Jas. A., Areato, Cal.
 Young, Jas. A., Alton, Cal.
 Pascoe, M. W., Taft, Cal.
 Page, P. F., Jr., Maricopa, Cal.
 Morris, C. A., Bakersfield, Cal.
 Bahrenburg, Geo. E., Bakersfield, Cal.
 Fogg, E. S., Wasco, Cal.
 Purves, John, Oakland.
 Purcell, Edw., Oakland.
 Campbell, Geo. F., San Bernardino, Cal.
 Howson, Carl R., Highland, Cal.
 Stiles, W. H., San Bernardino, Cal.
 Carter, Ray A., Los Angeles.
 Adams, W. L., Fresno.
 Butin, Mary R., Madera, Cal.
 Foster, E. C., Hanford, Cal.
 Stolle, Francis, San Quentin, Cal.
 Flint, Wm. H., Santa Barbara.
 Seroggs, G. A., Los Angeles.
 Cowan, Jas. R., Los Angeles.
 Taylor, H. N., Maricopa, Cal.
 Fields, D. B., Weaverville, Cal.
 Warden, C. C., Los Angeles.
 Holmes, Will H., Pomona, Cal.
 Wharton, Chas. G., Los Angeles.
 Macklin, R. K., Pasadena.
 Cahoon, Grace W., Los Angeles.
 Hawkins-Ambler, G. A., Los Angeles.
 Clemons, E. J., Los Angeles.
 Dederer, C., Los Angeles.
 Slater, John H., Los Angeles.
 Blake, W. P., Los Angeles.
 Bowen, D. S., Los Angeles.
 Shoemaker, Harlan, Los Angeles.
 McClish, C. L., Los Angeles.

RESIGNED.

Mizner, W. G., San Francisco.
 White, Grace R., San Diego.

DEATHS.

Kannon, M. M., Los Angeles.
 Hostetter, Abram, Monrovia.
 Mules, J. H., Watsonville.
 Howard, Lee Verne, Santa Monica.
 Ross, Ren. O., Fresno.

California State Journal of Medicine.

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be
Typewritten.

Notify the office promptly of any change of address, in
order that mailing list and addresses in the Register may
be corrected.

VOL. XII MAY, 1914. No. 5

On pages 196a, 196b, 196c and 196d will be
found the action of the State Society in the
matter of Industrial Accident work.

EDITORIAL NOTES

THE SANTA BARBARA MEETING.

The Annual Meeting of the State Society, held
last month at Santa Barbara, was a distinctly suc-
cessful one and the attendance was rather larger
than is usual for Santa Barbara meetings. The
hotel people did everything possible to make it
comfortable for the members and there was re-
markably little kicking. The officers elected are:
Dr. Harry M. Sherman, President; Dr. George
A. Hare, of Fresno, First Vice-President; Dr.
Rexwald Brown of Santa Barbara, Second Vice-
President; Dr. René Bine, Dr. A. W. Hoisholt,
Dr. Ewer and Dr. A. C. A. Jayet, of San Jose,
were elected to the Council; Dr. Philip Mills
Jones was re-elected Secretary. None of the re-
ports, etc., could be obtained in advance for put-
ting into type and so no attempt is made to pub-
lish the full transactions in this issue. The minutes
will be printed separately as soon as possible and
sent to county society secretaries as there are a
number of things for the county units to consider.
The plan presented by the Council for handling the
insurance situation was adopted without the slight-
est change and together with the fee bill which
was endorsed, will be found on pages 196a,
196b, 196c.

THE SAN FRANCISCO POLYCLINIC.

The Polyclinic recently celebrated the twenty-
fifth anniversary of its birth as an organization in
the medical life of California, and some of the
gentlemen connected with it made the suggestion
to the Publication Committee that a special num-
ber of the JOURNAL be issued, the contents to be
mostly articles contributed by those who either are
now or have been in the past connected with the
institution. It was intended that the April issue
should be devoted to this matter, but press of work
prevented getting the material in shape in time
for that number, and so it appears this month.
Some very distinguished men have been connected
with the Polyclinic during its twenty-five years of
existence, and while it has had its own vicissitudes
and the sun of good fortune has not always shone
upon it, still its life has been a good one and its
progress steadily upward. There can be no doubt
that there is ample room in San Francisco for a
post-graduate teaching institution; there is also
room for a similar institution in Los Angeles, and
if the right men will work earnestly for the de-
velopment of such an enterprise in the right direc-
tion, it can be very useful. We sincerely trust
that the Polyclinic will continue its growth and
development along the lines indicated, and that it
will become a post-graduate institution that will
be really used by our physicians in California for
the inevitably necessary "brushing up."

IDEALS.

California is particularly happy in having within
her gates educational institutions that march "*pari
passu*" with the best; and in this day of high ideals
as illustrated in the curricula of the world's schools,
there can be no higher praise. The recent trans-
formation of our medical schools into colleges of
the two universities was a long step in the steady
advance towards the newer goal of vocational train-
ing; and quite recently the San Francisco Polyclinic
has added as capstone to this admirable structure
a theatre for efficient post-graduate instruction.

It is a commonplace observation that the men
who are to-day being graduated from our medical
schools come forth far better equipped for the
practice of their art than were those mustered into
its ranks some years ago. This premised, is it not
to be deplored that the average medical practitioner
is not a man of general culture, as we would have
all members of a learned profession be? The
world and its work was never better worth pre-
paring for than now, for in science especially a new
renaissance is arriving; the mysteries of natural law
and human potency are being rapidly unveiled.
The knighthood of the "Quest of Life" enrolls in
the order of psychic and mechanical investigation
and presses on to new accomplishment. Though
neither wins the "Grail," each wins nearer to its
laws. By the delicate ministrations of aseptic sur-
gery, life is prolonged. Immunization lifts ever
higher her red cross. Strong incentives these for
the young men of our day. But the scarcity of
broad culture is the "rift in the lute."

Perhaps one of the chief reasons for this condi-

tion is the fact of a premature election of vocational education. The minds and the efforts of the student are too soon and too narrowly directed towards those branches of learning which make for the future vocation. In this manner broad culture is missed in the curriculum, and this is unfortunately true in respect of all the learned professions. In our universities the tremendous influx of students, the confusion, the rush and the haste to enjoy the economical advantages of a degree have contributed much to this result. In our schools there is not a proper demarcation between the fundamental cultural studies of the early years and those preparatory to professional training of the later years. Early in his educational life the youth has been unfitted for liberal culture because the methods have been too highly specialized. The student has not sufficiently enjoyed in the lower grades instruction in the humanities before entering upon the studies preparatory to the vocation of life. A fundamental and sympathetic acquaintance with the humanities is as integral a part of a liberal education as a fundamental and sympathetic acquaintance with the sciences. In preparation for medicine the culture of science is of course nowadays not neglected, but the cultivation of the humanities too frequently is. In either case the education that should precede vocation is lacking, and the pursuit of the vocation becomes arid and material. "Quick returns" is the shibboleth; the riches and uplift of the humanities is bartered for a mess of pottage.

Education is to enjoy the best and know the best, as well as to produce the best. The degree of a learned profession should be something better than a meal check. It has been said with some truth that the allurements of Mammon are too often permitted to call our ingenuous youth from the proper business of school and college. Short roads tempt them to abandon the broad work of education and to go prematurely to schools of professional and technical instruction. The consequence is, the sending forth of half-educated men to plead the causes, to heal the diseases and to lead the thinking of this generation.

J. DENNIS ARNOLD.

THE FEE SCHEDULE.

In looking over and thinking about the fee schedule agreed upon and recommended by the Council of the State Society, there are a number of points to be taken into consideration:

- It is not a schedule of flat fees for all cases.
- It is a list of minimum fees appropriate for workmen earning not over \$1,000 a year.
- It does not cover everything; special cases need special consideration.
- It is not put out as a contract of flat fees for which physicians must treat everybody injured.
- The total amount received by our members per year will be very much more than what they get now.

Any member of the Society may be called in, if he wishes to do the work.

Any member has a chance to keep his patient and treat the injured one, if he wishes to do so, other things being equal.

It is especially understood and provided that unusual work shall receive adequate compensation.

It is essential that all bills be itemized and not "padded." Dressings used should be entered on the bill and a reasonable charge made for them.

All contracts to furnish medical services at wholesale are abolished.

CONSIDER SOME ACTUAL CASES.

In studying this matter, the accounts of a surgeon who does quite a little of this sort of work for people of moderate means were kindly submitted for examination. Consider these actual cases:

A workman had a compound fracture of both bones of the leg. The family wished to pay the doctor in advance. The highest fee he could ask in the circumstances was \$60, which was paid. He treated the patient for six or seven weeks in the hospital and finally did a bone-planting; the man will probably have to be operated upon again. The doctor has treated the patient for nearly three months, has operated twice and will have to do so again—and all for \$60! Under the law and the fee schedule as recommended, this same surgeon would have received over \$300 for the work already done.

Again: A workman suffered a bad fracture of the femur. A bill for \$50 was sent in. After two years the surgeon has received two payments on account amounting to \$15, and he has not pressed the patient because the man actually has not the money to pay the bill without taking food from his wife and children. Under the law and the fee schedule, the surgeon would have received from \$150 to \$200 for this case and got his money at once.

Which is the better for the physician?

ANOTHER EXAMPLE.

A member of the committee that formulated the fee schedule met a friend who does considerable surgery and in looking over the figures the surgeon scoffed at \$30.00 for a herniotomy. "Well," said the other gentleman, "what would you charge a man whose income is but \$1,000.00 a year, for such an operation?" The surgeon, after a moment's thought, said: "Why, I think

about \$50.00 would be as much as could be fairly charged." "Very well," replied his friend; "now consider the matter in this way. The fee allowed is \$30.00 for the operation. You would have to see the patient twice a day for, say, four days; that, at \$1.50 a visit is \$12.00. Then you would probably see him once a day for ten days, making \$15.00 more, or a total of \$57.00; \$7.00 more than you said you would charge! And when would you get the money for your operation if the man had to pay his own hospital expenses and your bill as well?" "Probably not for a year, if at all," was the reply. "Exactly so," said his friend; "and under this law and fee schedule, your bill will be paid immediately."

"I had not thought of it that way," said the surgeon, "but you seem to be right."

What do you think of it?

THE ANNUAL MEETING AT SANTA BARBARA.

It is not possible to publish the full proceedings of the Annual Meeting held last month at Santa Barbara in this issue of the JOURNAL without causing too long a delay in getting it out; they will appear in the June number, however, and as matters of the greatest importance were considered and acted upon, the reports should be read by every member. During January, February and March a number of conferences were held between representative members of the Society, the Insurance Commission and the Board of Adjusters of the insurance companies, and the result of these conferences, in the form of a general agreement and fee schedule, was presented to the House of Delegates in the Report of the Council. The agreement is practically a condensation and crystallization of the suggestions which have been made editorially in the JOURNAL during the past four months. We may consider ourselves fortunate in that we did not wait for two years or so and endeavor to fight this accident insurance, as did Michigan, but that our Council was wise enough to take up the question at once with the beginning of the law, and thus save as much trouble and anguish as possible. It must be remembered that this law is here and is here to stay; and also, that it has many good things about it, and that the men who are administering it are doing so fairly and broadmindedly, and intend to do the very best that they can for all the parties who are affected by it. Furthermore, it must not be forgotten that the law is really intended to care for only those who are working for comparatively small wages; indeed, the maximum income considered by the law is \$1,666 a year.

ORIGINAL ARTICLES

GEORGE CHISMORE.

By DOUGLASS W. MONTGOMERY, M. D.,
San Francisco Polyclinic.

I first met George Chismore in the spring of 1886, shortly after I began to practice in San Francisco. Like every beginner in a strange city, I felt the need of friends, and Chismore had a face attractive to everyone seeking human sympathy. This chance acquaintance would, however, never have amounted to anything if it had not been for favoring circumstances. Harry M. Sherman was then living with Chismore, and Sherman and I became fast friends. We two determined to agitate the forming of a society composed of men of our own age, and so began the Friday Evening Club, that met on Friday evenings and that had neither constitution, by-laws nor a permanent place of meeting, as we met in the residence or office of the members. The club was comprised of:

George Chismore, Alexander P. Whitell, Wm. S. Whitwell, John F. Morse, Henry Ferrer, Martin Regensburger, Harry M. Sherman, Robert I. Bowie, J. D. Arnold, W. W. Kerr, C. A. Von Hoffmann and myself. It was out of this association that the San Francisco Polyclinic later evolved.

In spite of the difference in age between Chismore and the rest of us, he was always a favorite, and we never wearied listening to his experiences on the frontier, which he told charmingly. Besides he had the gift of radiating kindness, a wonderful gift in a physician, especially when united with a knack of helping those in difficulties. He was then in his prime, and was doing a very large practice, both in his office, in what afterwards became his exclusive specialty, and also as a general practitioner. Although he had a large practice he did his visiting on foot and by employing the street cars. This eccentricity, for it amounted to such, may have been due to a peculiarity he had of continually watching his physical capabilities. He would feel the keys in his pocket to determine if he could distinguish one from the other. He would try the feeling of different coins with the same intent. When starting in practice his money gave out and he lived for quite a number of days on milk alone, and during that time he ran a stated distance each day to determine if he was maintaining his strength. In fact he was always studying himself. In depriving himself of a vehicle he knew that the walking he necessarily had to do was of benefit. He learned, as many another has, that the knee is an admirable physical monitor, and that when it becomes feeble the rest of the body is apt to follow it. By constant walking he realized that he would keep himself in condition. Relating to this I remember an amusing incident. A strike took place on the Sutter Street carline, and Chismore thought the employees were in the right in the contest. Consequently, from sympathy, he would not enter the cars, and as his practice lay to a large extent in the district served by this line his legs were nearly worn out before the strike was over.

This care of himself may have been due to some extent to indigestion, from which he was a constant sufferer, and may also have been a natural consequence of a long experience of frontier life, where physical ability is of the highest importance. He lived long in Alaska, and while there offered his services to the Smithsonian Institute as a student of the Indian tribes, on the condition that he would be cared for in case of disability from accident or old age, for he knew that if he failed in health he would be killed by the Indians as a useless member of the community. This offer was refused, and he left Alaska, but he never ceased to regret the wild life of the wilderness.

The relationship between Chismore and Sherman was highly amusing. Chismore was full of good-natured tolerance for everyone except for the mean man or the one who would maliciously deceive, while Sherman held strict control over his own actions and expected everyone else to attain the same high level of duty. Sherman was tidy, while Chismore was as careless in his person and surroundings as a frontiersman, which he really was. Chismore was deeply interested in the study of urine and would collect large numbers of bottles of this excretion from his various patients, and while pondering over the condition of his patients and the relationship of their symptoms to the urine, decomposition would take place in his specimens and they often became very ancient indeed. Along would come Sherman, and the whole collection would go down the sink. Observing this Chismore would bear with the meddlesomeness of his friend, although he did not approve of it.

Chismore was born, or at least lived as a child, in Ithaca in New York State. The family was mechanical, they were mostly, if not all, employed in the Remington rifle works, and the impress of this early association was ground deeply into Chismore, and for him every rifle he owned had a separate individuality.

When Chismore was a boy of about fourteen he and his father had a disagreement, and both being Chismores neither would yield. The upshot of it was that the little fellow was put on the railroad for New York City with some money in his pocket and the usual parental admonitions. In New York he shipped as a cabin boy, and he must have enjoyed his trip around the Horn, as he told many a story of it. It was a long journey, as in those days the vessels sailed nearly to the African coast to take advantage of the winds, and in the narrow limits of a ship there was fine opportunity to try out shades of human nature. The salient feature in this regard was a surly mate, who once ordered the boy to scrub a hatch cover. The boy did as he was bid, and having accomplished his task gathered up his brushes and was preparing to leave, when along happened the mate and ordered him to continue until told to stop. The mate forgot all about him and when he did return Chismore was still scrubbing, although with brush and sand he had scrubbed a hole clear through the hatch cover.

When the ship arrived in California it saw the

last of its alert and pertinacious cabin boy, who went to the mines in Nevada, where he fell in with a dentist and became, as he himself often said, a good dentist. In those days occupations were lightly changed, and it was with equal readiness that, afterwards falling in with a doctor, and being told he had an aptitude for medicine, he began to read the doctor's books and became a medical man. At one time, on a voyage, he tried his hand at being an artist, but after endeavoring to catch the colors of a sunset he pitched the whole painting paraphernalia overboard, and returned to his work as a sailor man.

For a long time Chismore wandered in Alaska and otherwheres on the Pacific Coast as a contract surgeon in the United States Army. This was at a time when it was not necessary to have a degree in order to hold such a position. In fact he took his degree quite late in life, and I remember how surprised I was when I first learned the date of his graduation. Even after graduating he did not go into genito-urinary surgery. He became connected with a hospital having a large gynecological service, and was making a name for himself as a gynecologist when one of those upheavals occurred that happen in every institution, and he found himself down and out. The full details of this injustice I never learned, for Chismore was never one of the mourners. I learned enough, however, to know that it was one of the usual occurrences in institutional life. Institutions, when they grow at all large, become nests for intrigue.

After losing this hospital position Chismore went along with his general work, but with a strong bent toward diseases of the genito-urinary tract, in which he had had considerable experience during his service in the army. He was drifting and it was at this time that Sherman's masterfulness shaped Chismore's life. It is true that he was drifting rather purposefully, but it was not the straight line needed to really attain his object. Among other things Sherman went to a bookseller and ordered every book obtainable on the genito-urinary tract, and stacked them up in Chismore's bedroom. Chismore, who was an industrious reader when the mental fodder was put down before him, began at the top of the pile and read down through it. In this sense Sherman made Chismore. In mentioning this incident of the books I may also mention a marked feature of Chismore's character. Till long past middle life he retained his receptivity to ideas, and his inventiveness. He read and digested those books, and applied what impressed him to his practice, and he was past fifty years of age when he invented a way of crushing stone in the bladder.

I may here relate an incident that showed the characteristics of both Chismore and Sherman, and the relationship between them. Sherman and I were returning from Toronto to San Francisco, and on boarding the overland train in Chicago whom should we run across but Chismore. Chismore was very proud of his knowledge of the wilderness and overestimated his adeptness in hunting and in woodcraft. In fact, he was, in an unconscious sort of way, very conceited. I now

use the term conceited in the same sense as it occurs in the Scotchman's prayer, "Oh Lord! Gie us a gude conceit o' ourselves," and carries the signification of strong self-appreciation without belittling either neighbor or adversary. After leaving Ogden, and when we had entered that dreary desert that stretches to the top of the Sierras, Chismore looked up from the "Confessions of Jean Jacques Rousseau," that he was reading, and said quietly, "My memory of locality is so keen and I have been over this road so frequently that I can always tell within a few miles of where we are." Sherman cocked up his ear at this and in about an hour he asked Chismore to state where we were. He looked out on the dreary sagebrush waste, where a coyote would have to carry a guide book, and made his guess. It was a very poor guess, and Sherman was prepared to show him the pooriness of it. Several times during the day this sort of thing was repeated, and always with the same result. Chismore was always a good sport and never refused to answer Sherman's challenge, and Sherman, on his side, took great delight in calculating how far the assertion varied from the truth. This incident has always been of the highest interest to me. Successful physicians are apt to become intolerant of criticism, partly because they are used to having their own way with their patients and to ordering them around as one would children, and partly because they are not brought up squarely against an opponent, as a lawyer is. Chismore always remained as open to criticism as he was to ideas, and at the same time was punctiliously careful of his self respect.

In politics Chismore was a Democrat. I once asked him why he had joined that party, when his very early affiliations were with the Republicans. He said he had seen so much crookedness in Alaska during the Grant administration and afterwards that he could not stand it. Having become a Democrat he followed the party leaders almost unquestioningly. Grover Cleveland was the darling of his heart, and he never failed when in New York to personally pay his respects to his political chief. I, however, shall never forget his embarrassment when W. J. Bryan came upon the scene. Chismore would take a silver dollar out of his pocket and try to convince himself and me that it was what Bryan said it was, but his good sense always stood between him and an extravagant Bryanesque conclusion. He would even go to the extent of giving the coin to a beggar, and then turning to me would say laughingly, "You see it must be good. That fellow takes it all right."

Chismore was not an educated man in the ordinary acceptance of the term, either in letters or in medicine, yet both in medicine and in letters he was much cleverer than most of those who are educated. He was forced to gain his livelihood too early to have much schooling, and on the frontier, where so much of his early medical life was spent, there were no opportunities to study medicine in a regular way. This lack of education led to many curious expressions and mistakes. For instance the "prostate" was never

anything to him but the "prostrate," and the mistake was all the more curious because it lay in his specialty and was a word he necessarily employed constantly. Furthermore Sherman must have corrected him again and again for this very mistake.

He was often not at all enchanted by an accurate diagnosis, and this led to the following amusing incident:

While Chismore was off on a hunting trip, Sherman called me in to see a patient who had arrived from the country to consult Chismore. I made a diagnosis of leukocythemia, of which I was very proud, seeing that shortly before one of these cases had slipped through my hands. We gave the family and the patient the usual gloomy prognosis. Shortly afterwards Chismore returned and gave us an entirely new view of the case. According to him we had disturbed the family, and had caused a great deal of unnecessary trouble, and had not done anything to relieve the discomfort of the patient. In fact we had added to the patient's discomfort. It is needless to say that I then learned a few things, both about patients and physicians, and their mutual relations.

He suffered from many disadvantages from his lack of training although in some ways it may have been an advantage. An educated man, unless he keeps a strict guard on his manner of observing natural phenomena, may become hedged in by his training to think along unbending lines. Books must necessarily be schematic as they have to be built within rigid limits, otherwise they would be compilations of disorder, an inextricable tangle of actions and facts. To comprehend disease phenomena according to books would be to regard them as solid cubes and parallelograms, sharply limited and wholly enclosed. To unswervingly follow their guidance is therefore to become a ritualist rather than a thinker. Chismore was far from being so constituted. He would see as many penumbræ, shadings, and rotundities in nature as Leonardo da Vinci himself. Then again a man of parts like Chismore is forced by his lack of knowledge to think out the possibilities of the individual case, and in medical work it is often the events and facts in the individual case that count. As illustrative of this I once heard a man say scoffingly of Chismore that he knew many little things about the care of patients that he had picked up from nurses. It struck me at the time that it was high praise for Chismore, and was another aspect of a saying that was daily in the mouth of von Leyden, "For the patient there are no small things." Nevertheless there was no doubt that Chismore's ignorance in many fields of medicine was a great hardship to him. In spite of this, however, he held his practice not alone among patients but also among physicians, and it shows the intrinsic merit of the man that he did so. At a most trying time in the transition of the whole art of surgery when men with far greater advantages, and while yet in their prime, were being shelved, he, without the backing of any hospital, institution, or clique held his own and

kept the confidence of a numerous clientele till his final illness.

He overcame even the disability of personal ailment, as years before he took to his bed he was constantly in pain.

Not long before he took to his deathbed I met Chismore on Sutter street, and a kindlier, more benevolent face you would rarely see. He was thinner than he had been, and his white hair and beard with his delicately traced features gave him an ethereal, spiritual look. Sometime after this I went to visit him with Sherman. On entering the room Sherman kissed the old man on the forehead. The answering look of full, tender, lingering affection was one of the finest sights I have ever seen.

Hardship may embitter a man, and prosperity is even a severer test for human character, and Chismore had passed through all grades of both the one and the other and at the end still retained his capacity for loving and being loved. This was worth while.

A REVIEW OF THE EARLY VACCINATION CONTROVERSY WITH AN ORIGINAL LETTER BY JENNER REFERRING TO IT, AND TO THE SPREAD OF VACCINATION TO THE SPANISH POSSESSIONS OF AMERICA, THE PHILIPPINES, AND OTHER EUROPEAN SETTLEMENTS IN THE ORIENT.

By PHILIP KING BROWN, M. D., San Francisco Polyclinic.

No sooner had Edward Jenner proposed the practice of vaccination as a preventive for smallpox than there arose in England a controversy as to its safety and efficiency which has been endemic ever since, interrupted by more or less violent epidemic outbreaks. Nor has the controversy been confined to the home of its birth, for we find it more than a century later in full flower even in the classic hamlets of our own state.

The humor of the situation reveals itself in the analysis of the present state of the controversy in which it is clear that the antivaccinationists have contributed no new argument in that more than hundred intervening years, whereas science has shown that whatever little claim they had to a hearing was based on misrepresentations now well understood and revealing no truth in favor of their contention. The 10th Edition of the Encyclopedia Britannica in an article on vaccination presents only an unintelligent arraignment of the method unworthy of a place even in the earliest edition. In a short biography of Jenner closing with an apologetic paragraph, is the only meagre account of Jenner's great discovery. The 11th edition gives a fairly satisfactory historical review of the established facts of vaccination.

In presenting to you the status of the controversy as defined within the first few years of Jenner's announcement of his discovery, I have reviewed articles published at the time and especially those referred to in one of Jenner's letters to a friend, which letter fell into my hands through a collector and which reads as follows:

Cheltenham, 22 Nov., 1806.

The Rev. Mr. Dibbin,

Kensington.

My dear Sir:

I have seen the Edinburgh Review, and a most gratifying sight it was. Mosely and his adherents had before called down many a pelting storm upon their heads, but this tornado must I think annihilate them. The author or authors are perhaps not perfectly conscious of the immensity of good they have done. The Pen of Mosely, I am confident, has slain more than the sword of Bonaparte. This admirable Critique should be universally read. But this cannot be expected while it is exhibited in its present shape only; and I am at a loss to know how it can obtain circulation in a detach'd form. But among your brethren of the Press you will soon I imagine be able to tell me. It should pursue Mosely's book in all directions, as an antidote to its Poison.

Woodbine Cottage looks beautiful even in death, for Winter has apparently killed all its vegetable ornaments. Our Fd. is going on—Mount Pleasant is now the favorite object. This is a lovely Meadow and commands one of the richest prospects around this favor'd spot. Here you will ere long see a Magnificent Reunion. Pruen's taste is more conspicuous in architecture than in ornamental gardening. The latter, which is a species of Landscape Painting requires much Time and study to produce correct specimens. The taste of Ferryman is far beyond that of any one existing or that even did exist, according to my notions, in laying out ground.

I hear with extreme delight that my poor dear Swann is better—God grant it may be true—I have a thousand fears about him. If you don't come and see us, write soon, I beg you.

My best respects to Mrs. Dibbin.

truly yours,

E. JENNER.

P. S.—I have just received from Madrid the most interesting document that has ever reached me on the vaccine subject. It comes in the form of "Supplemento a la Gazette de Madrid" and gives a detailed account of an expedition fitted out by order of his Catholic Majesty for the sole purpose of propagating the vaccine in all his foreign possessions and many other parts of the world. The expedition sailed in 1803 and returned in 1806. I will send you a copy of the Gazette and a translation. I don't imagine the annals of history furnish an example of philanthropy so noble, so extensive, as this.

The article referred to was entitled "On Vaccine Inoculation" by Robert Willan, M. D., and others, and is a masterly criticism in the Edinburgh Review, Vol. 9, 1806-7, pp. 32-66. A certified copy of the supplement of the Madrid Gazette for October 14, 1806, giving a brief account of Charles IV's expedition, I succeeded in securing through the American embassy at Madrid, from the National Library, and it was translated, preserving the style of expression, by Mme. I. M. de Regadas. The former article is quoted

from freely, in this paper, and the latter is presented in full.

It must be borne in mind that the controversy of a hundred years ago did not confine itself to the merits of cow-pox vaccination as a preventive to small-pox. The great issue was whether cow-pox really was as safe and effective in establishing immunity as direct inoculation of small-pox and as to whether it did not introduce into the system "bestial humors," "strange mutations of human character from quadrupan sympathy," scrofula, malignant ulcers, etc.

Inoculation of small-pox as a preventive measure is spoken of by even anti-vaccinationists of that period as a most noble and blessed discovery as it diminished the hazard to which everyone was subjected in a most important degree. For one hundred years inoculation had been in practice as a preventive to small-pox,—that is, the disease itself was transferred from case to case, it being recognized that an immunity followed recovery, and the mortality from cases so inoculated was slight as compared to that which obtained from the disease itself,—called the "natural small-pox" to distinguish it from the inoculated.

Willan writing of the situation at that period:

"Of those who have the disorder naturally, one is found to die in six. Of inoculated patients, only one dies in 250. In London, where it ought to be best ascertained, some eminent practitioners have stated the proportion to be as high as 1 in 100. The zealous antivaccinationists have denied it to be greater, under judicious treatment, than 1 in 1,000. It cannot be denied, however, that besides this risk to life, the disease, even under this mitigated form, has frequently proved an exciting cause to scrophula, and other dreadful distempers, and has often been attended with blindness and deformity."

It will be clear from these statements what a frightfully high mortality attended epidemic small-pox, and its prevalence may be estimated from the data presented later by the House of Commons Committee appointed to investigate cow-pox vaccination. From a calculation made by Dr. Heberden whose name has come down to us through the association with the nodes on the joints in rheumatism, it seems that over a period of thirty years before vaccination 95 persons died of small-pox in London out of every 1000 deaths, and the annual death rate of Great Britain was upward of 40,000. This would make the number of cases of small-pox annually between 240,000, based on all the deaths being from the natural disease, to a half million if one-fortieth of the total deaths were due to the inoculated disease.

This was the status of affairs when Jenner announced the results of his observations on cow-pox and its relation to the prevention of small-pox. His own account of these observations is interesting:

"My inquiry into the nature of the cow-pox commenced upwards of twenty-five years ago. My attention to this singular disease was first excited by observing, that among those whom in the country I was frequently called upon to inoculate,

many resisted every effort to give them the small-pox. These patients I found had undergone a disease they called the cow-pox, contracted by milking cows affected with a peculiar affection on their teats. On inquiry it appeared that cow-pox had been known among the dairies time immemorial, and that a vague opinion prevailed that it was a preventive of the small-pox. This opinion I found was comparatively new among them; for all the older farmers declared they had no such idea in their earlier days: a circumstance that seemed easily accounted for, from my knowing that the common people were very rarely inoculated for the small-pox, till that practice was rendered general by the improved method introduced by the Suttons: so that the working people in the dairies were seldom put to the test of the preventive powers of the cow-pox."

During the years of investigation and experiment Jenner's hopes had been dampened by finding that some persons who had been infected from the genuine cow-pox, had, nevertheless, proved liable to variolous infection, and that one was sometimes effectually protected, when another infected from the same sore, proved liable to after-contagion. By diligent and continued observation, however, he was fortunately enabled to explain this anomaly also. He ascertained by repeated experiments, that when the pus was taken from the ulcer or sore on the cow, after a certain stage of its progress, it produced a sore in the human body of a character altogether different from that which resulted from an earlier infection, and that it was only the disorder communicated in the earlier stages of the case, and before the pus originally secreted had undergone any "change or discomposition" that had the power of shielding the patient from an infection of small-pox.

Having brought his observations so far to maturity, it occurred to Jenner to try the experiment of propagating the disease by inoculation, first from the animal, and afterwards from one human creature to another. In the year 1796, he accordingly inoculated a young man from the hand of a milker who had the distinctive symptoms of the genuine cow-pox, and had the pleasure of finding, that, when inoculated for the small-pox, at the distance of some months, the individual completely resisted the contagion. The experiment was afterwards enlarged; and, after inoculating some hundred children, and putting them, at different intervals, to the test of a subsequent inoculation for small-pox without effect, he ventured to communicate his discovery to the world in a treatise published in 1798, which was followed up the year after by a still longer list of experiments and observations. In these works, Dr. Jenner suggested, that the disease itself was probably not original in the animal from which it took its name, and that several circumstances led him to believe that it originated from the distemper called the grease in the heels of horses, and was communicated to the cow by being milked by persons employed in dressing such horses. The cow-pox was uniformly unknown in those dairies where the milking was performed by women; and in all

the instances where Dr. Jenner could trace its introduction, he found that the milkers had been recently in the habit of handling horses affected by the grease. This conjecture, it is said, was later verified by inoculating the cow from the grease directly, thereby producing the genuine form of cow-pox.

The first public opposition that was made to Jenner's report of his discovery, was in a publication of Dr. Moseley's in 1798. In this work, which was entitled, "A Dissertation on Sugars," the doctor ingeniously contrived to introduce a violent philippic against the new practice of vaccination, in which, as he had no experience or observation on which to found his opinion, he contents himself with pouring out an immense quantity of abuse.

It was this and subsequent publications of Moseley's that called forth Jenner's statement, "Moseley's pen has killed more than Bonaparte's sword."

Following Moseley's attack, reprinted two or three times, the opposition grew quite violent. Charges of murder and falsehood were interchanged among the disputants without the smallest ceremony; the medical journals foamed with the violence of their contention; it raged in hospitals and sick chambers; and polluted, with its malignity the sanctity of the pulpit, and the harmony of convivial philanthropy.

In 1802 the subject was submitted to the consideration of a committee of the House of Commons, who after taking the evidence of Drs. Ashe, Sir W. Farquhar, Blane, Woodville, Baile, Pearson, Haberdon, and thirty-two other practitioners of the first eminence in London, gave a report decidedly favorable to the new system. Out of the forty persons examined on this occasion indeed, there were only three, viz., Dr. Moseley, Dr. Rowley and Dr. Birch, who expressed any doubts of its efficacy; and at this time it is remarkable that not one of these gentlemen went beyond the expression of doubt; all the rest were decided and confident in their testimony. Dr. Woodville stated in particular, that in the last six months, he had vaccinated, at the small-pox hospital, 7,500 patients, the half of whom had been since inoculated with the small-pox matter, without the smallest effect being produced in any one instance.

Dr. Moseley himself stated that his opposition to cow-pox vaccination was founded at that time "on the basis of theory," and, two years after he had three times reprinted that miserable specimen of scurrilous buffoonery, he informed the committee of the House of Commons that he did not himself know of any instance in which it had either failed to prevent small-pox, or been followed by constitutional diseases, although he had heard of such things from persons, none of whom he could then recollect, or mention to the committee.

In 1804 Mr. Goldson of Portsmouth published six cases of small-pox occurring after vaccination, accompanied with observation, calculated to shake the confidence which was now very generally placed in the security of the Jennerian inoculation. These

were answered by Mr. Ring and others, who endeavored to show, that in some of his cases, Mr. Goldson's patients had not had the genuine cow-pox in the first instance, and that in others, they had not had the genuine small-pox thereafter. This part of the controversy was conducted with temper, and with a reasonable degree of candor. About this time there was issued in London a statement signed by many of the leading physicians of the time which served to quiet the controversy for a season: "Many unfounded reports having been circulated, which have a tendency to prejudice the mind of the public against the inoculation of the cow-pox, we, the undersigned physicians and surgeons, think it our duty to declare our opinion, that those persons who have had the cow-pox are perfectly safe from the infection of the small-pox. We also declare, that the inoculated cow-pox is a much milder and safer disease than the inoculated small-pox."

This certificate was signed with the respectable names of Drs. Bailie, Lettsom, Garthshore, Willan, Lister, Vaughan, Moore, and by five and twenty other physicians and surgeons of the first reputation in the metropolis.

The practical question being whether vaccination ought to be adopted in preference to inoculation with small-pox, it is evident that the question could only be decided by taking a comparative view of the advantages and disadvantages of vaccination and small-pox inoculation as pictured at the time. The arguments advanced by the two sides may be summarized briefly.

The great advantage of small-pox inoculation was that it prevented certainly, or almost certainly, the recurrence of that disorder, and that it was in general, infinitely milder than the natural form of the disease. Its disadvantages were shown to be that it is attended with considerable hazard, both to life and to the general constitution; and, that being an infectious disease, its partial adoption exposes greater numbers to the natural malady than would otherwise fall in the way of it. In consequence of this circumstance we have already seen that the total mortality by small-pox was increased nearly one-fourth after the practice of inoculation became general.

The advantages of vaccination, according to the report of its early advocates, were: (1) that the disease which it communicates is not in any degree infectious; (2) that it is as effectual a preventive of small-pox as the old inoculation; and (3) that it produces a disease infinitely milder, and less hazardous, than arose from the former practice.

Of these three invaluable properties ascribed to cow-pox by its admirers, the first was unequivocally admitted by its opponents: the disease is universally allowed not to be infectious.

The most determined enemies of vaccination did not long pretend to deny that it prevented small-pox for a certain time, or to a certain degree. The unquestionable facts that have been accumulated by its admirers, have established that general point in the most complete and satisfactory manner. Dr. Woodville alone subjected nearly 4,000 vaccinated

patients to the small-pox inoculation in the course of six months and found that everyone of them resisted the infection. That experiment was repeated probably not less than a million times, according to Willan and others, with the same result. Cow-pox, therefore, is confessedly a preventive of small-pox; and the only question is whether it will be an infallible and a permanent preventive.

The arguments on this point are of deep interest to us in light of our present vastly greater knowledge of immunity.

"It seems contrary to all analogy, and all rules of reasoning, to suppose a priori, that an immunity which is found to subsist for a certain time in the usual and healthful state of the system, will gradually and insensibly wear away without any apparent cause, or any sensible change to indicate its extinction; and the facts which bear at all upon the question, so far from suggesting or supporting such a supposition, seem, in our apprehension, completely to refute and discredit it. In the first place, the natural and inoculated small-pox, the measles, and the whooping-cough, which are the only other cases in which a preceding disease is found to bestow an immunity after its own cessation, are allowed to confer a permanent immunity, and not one that is gradually and silently destroyed by the lapse of time. In the second place, the matter seems experimentally settled, by the case of natural cow-pox, in which the security has been found unimpaired and entire after the lapse of twenty, thirty, forty and fifty years. Lastly, even if we were to admit the whole of the cases of small-pox occurring after vaccination, which the enemies of the practice have founded on, we could never hold that the preventive virtue naturally wore out in a certain time, because these cases are alleged to have occurred indiscriminately at all periods after vaccination which have yet been possible. In cases of continual exposure, they are said to have taken small-pox, at all distances, from three months to seven years after vaccination. It is impossible to suppose, therefore, that the preventive power of cow-pox wears out of the human frame in a certain period of time. If the cases are to be submitted at all it would be more rational to suppose that it imparted a weak or imperfect power of resistance, which might be overcome by a powerful contagion."

The great difficulty of establishing true relations of cause and effect was keenly appreciated by the early defenders of vaccination and over this question of immunity through vaccination the fight was strongest.

The evidence that is requisite to prove or disprove any proposition in the science of medicine, is of a peculiar kind. It differs entirely from that species of proof which satisfies a court of law. Both direct and circumstantial evidence, which would leave no doubt in the breasts of judges and juries, have often not the slightest tendency to render a medical fact even probable. The declarations, and even the oaths of the most conscientious, disinterested, and able men, are all insufficient. Nor is there to-day sufficient understanding

of immunity and its laws to satisfy our high standard of scientific explanation.

It is not surprising, therefore, that the question of relative immunity was an all important part of the controversy and that the attack on vaccination took the form of testimonials from all classes on this point.

This species of unintentional perjury, so large a part of modern medical advertising and controversy, was referred to by many chroniclers of Jenner's time as being very common during the 18th century in every part of Europe; and, "the more improbable the fact was, the more numerous were the affidavits and the more respectable the signatures. Clergymen, judges, and peers, are daily swearing that they have been cured of incurable diseases; but the meanest apothecary smiles with contempt, when he reads their splendid testimonials."

Willan sums up the disputed point of immunity as follows:

"The first position is, that in all, or almost all the cases where small-pox have really occurred after an alleged vaccination, the patient really never had the cow-pox, the inoculation having miscarried, by accident or inattention. The total number of such cases, we believe, is considerably under a hundred out of little less than half a million of vaccinated subjects; and, when the following particulars are attended to we are persuaded that they will appear fewer than might have been reckoned on, from the novelty, and, in some respects, the nicety, of the practice. In the first place, it is well known that within a short time after the promulgation of the discovery, a multitude of individuals, of all sexes and professions (Dr. Willan says not less than 10,000), many of whom had never seen the disorder in their lives, took upon them to practice the inoculation in all parts of the kingdom. That some mistakes should be committed by such practitioners, even in a matter of the utmost simplicity, could not excite wonder; but the truth is, that the operation was a matter of considerable nicety and not perfectly understood, even by medical practitioners, till after the publication of Dr. Jenner's full directions and engravings in 1802. The causes of mistake were various: 1st, the matter was sometimes taken from a spurious sore, in the first instance, which, though it raised a vesicle, and excited inflammation in the inoculated patient, could never, of course, communicate the genuine disease. 2nd, it is still oftener taken from the true sore at too late a stage of its progress, in which case, though it seldom failed to produce a very active inflammation, it could never give the true cow-pox. 3rd, the matter, though taken in proper time, was sometimes decomposed or corrupted, by being too long kept, or exposed to air, or heat or cold, or diluted in too much fluid. 4th, when all these circumstances were attended to, it sometimes happened that, owing to the existence of eruptive fever, or violent cutaneous disorders, the patient did not receive the full constitutional affection nor indicate the decided symptoms of regular vaccination. Lastly, it was some time before even the regular practitioners were so

perfectly acquainted with those characteristic and decided appearances, as to be able to say with certainty whether the vaccination had actually taken effect or not." The circulation of Dr. Jenner's descriptions and engravings went far to remove this uncertainty; but it was not perhaps completely obviated till the publication of Dr. Willan's excellent observations, in which he described all the various forms and appearances of the spurious, as well as the true vesicle, in a way which puts it in the power of any attentive reader, in the least degree acquainted with the subject, to attain perfect assurance in every case that can occur to him.

This is the brief history of one of the greatest contributions to preventive medicine the world has ever known. In the present age of scientific review and proving of every fact in medicine before its acceptance, it stands out as a contribution from clinical medicine based upon observation and reasoning. That Jenner extended his observations over a period of 25 years before voicing his belief

cow-pox vaccination as well as for the extent and dread of the disease which it was destined in time to reduce almost to an historical memory. Indeed, but for the interference of the ever present false and shallow prophets whose chief ability seems to be mistaking opinion for fact, it is quite probable that small-pox would long ago have become practically unknown.

The newspaper account of the expedition is given in full, for it tells in graphic way the interesting features of the expedition. I have secured a photograph of the statue erected by the Filipinos in Manila to Charles IV in commemoration of the expedition and doubtless there remain traces of it in some of the American cities visited, but thus far I have been unable to secure any data concerning them.

SUPPLEMENT TO THE GAZETTE OF MADRID OF TUESDAY, OCTOBER 14TH, 1806.

On Sunday, the 7th day of last September, was given the honor of kissing the hand of our lord the King to Dr. D. Francisco Xavier de Balmis, Honorary Surgeon of his Royal Camara, who had just returned from a voyage around the world, undertaken with the only object of carrying to all the distant Dominions of the Spanish Monarchy, and to those of diverse Nations, the inestimable gift of vaccine. His Majesty has shown the greatest interest in hearing about the principal events of the expedition, being extremely gratified with its results, which have exceeded even the hopes which were conceived at its beginning.

The expedition was composed of various members of the faculty and employees, besides twenty-two children, who had never passed through small-pox, and who were destined to preserve the precious fluid, transmitting it successively from arm to arm, and from one to the other during the voyage. The expedition left the Port of Coruna under the direction of Balmis the 30th of November, 1803. The first stop was at the Canary Islands, the second in Porto Rico, and the third in Caracas. On leaving this province through the port of La Guayra, the expedition was divided into two branches, one sailing towards Central America under charge of the sub-director, Dn. Francisco Salvani; and the other division pursuing its course under the direction of Balmis to Havana, and from there to Yucatan. At that province this branch of the expedition was again subdivided, Professor Dn. Francisco Pastor voyaging from the port of Sisal for that of Villahermosa in the Province of Tabasco to propagate the knowledge of the vaccine from the Royal City of Chiapas to Guatamala, toiling over the long and painful way full four hundred leagues to Oaxaca. In the meanwhile the rest of the expedition, which arrived safely at Vera Cruz, not only traveled through all the Vice-Regency of New Spain, but also the internal provinces, from which it returned to Mexico, the point of reunion.

Disseminated through every part of the northern hemisphere of America as far as the coasts of Sonora and Sinaloa, and even unto the Gentiles and Neophytes of the high Pimeria, the precious preservative against natural smallpox was established in every capital by means of a commission of the first authorities and the most zealous members of the faculties, who were to conserve it a sacred deposit, for which they will have to be responsible to the King and to posterity. The director then undertook to carry to Asia this part of the expedition, which had been crowned with the most brilliant success, and with it the great gift to humanity, and after overcoming many difficulties, they sailed from the port of Acapulco to the



Statue to Charles IV of Spain, erected in Manila to commemorate the vaccination expedition of 1803-1806.

publicly, commends itself to those who look for contributions to medicine from clinicians and the inductive method and who deplore the reasoning from single cases and single observations.

It must have been gratifying to Jenner to have received the account of Charles IV's expedition to Spain's American and far Eastern possessions in the interest of the promulgation of the doctrine of vaccination. At that early date (1803), following Jenner's first publication by only five years, it speaks volumes for the established efficiency of

Philippines, which was the limit prescribed for them, if he could reach it.

The great and pious designs of the King being favored by Divine Providence, Balmis accomplished the voyage in a little more than two months, taking with him twenty-six children from New Spain to vaccinate them successively as had been done to the preceding ones, and as many of them were from institutions, they went under the care of the matron from the Asylum for Abandoned Children of Coruna, who in this, as in the previous voyages, attended to their cleanliness with great diligence. The expedition having arrived at the Philippines, and the specific having been propagated in the islands subject to the dominion of his Majesty, Balmis, considering his philanthropic missions now ended, decided to extend the benevolence of the King and the glory of his august name even unto the farthest confines of Asia.

And in effect the vaccine had been carried and disseminated through all the vast archipelago of the Visayas Islands, whose kings, although they had lived in perpetual war against us, have laid down their arms, overcome by the generosity of an enemy, who presented them with health and friendliness when most terribly afflicted with an epidemic of virulent smallpox. Not less grateful were those who reigned in the Portuguese colonies and in the Empire of China when Balmis entered Macao and Canton, being able to preserve the fluid fresh and active, through the means already referred to, an undertaking which the English had never succeeded in doing on the various occasions when they made the effort, by carrying in ships of the East India Company, portions of pus, which arrived inert.

After spreading the vaccine in Canton as well as circumstances and political conditions permitted in that empire, leaving the further propagation to the care of the physicians of the English Factoria in this place, Balmis returned to Macao, and, taking passage on a Portuguese ship for Lisbon, arrived in that city the 15th day of last August. He stopped in Santa Helena, in which island he succeeded, as in every other place through exhortations and constancy, in getting the English to adopt the prodigious antidote which they had despised for the space of more than eight years, even when it was a discovery of their nation, and given to them by Jenner himself.

Of the branch of the expedition under Salvani, whose destination was Peru, it is known that they suffered shipwreck in one of the mouths of the Magdalen River, but found prompt succor from the natives, the immediate authorities, and the Governor of Cartagena. The sub-director, the three members of the faculty who accompanied him, and the children, with the fluid in good condition, were saved, and this latter was extended throughout the province easily and rapidly. From thence they sent it to the Isthmus of Panama, and undertaking successively (well provided with all that was necessary), the long and dangerous navigation of the Magdalen River, they stopped on both banks of the river when necessary, and went inland separately to accomplish their mission in the towns of Tenerife, Mompox, Ocana, Socorro, San Gil and Medellin, in the valley of Cucuta, and in the cities of Pamplona, Giron, Tunia, Veliz and other towns of large population, all of the members of the expedition uniting once again in Santa Fe. Everywhere they left the physicians instructed, and in the larger towns rules were given by the director, whereby they should preserve the vaccine, which was dispensed, according to the statement of the Viceroy to fifty thousand persons, with no bad effects. In the last days of March of 1805 they made preparations to continue their travels, following different directions to visit with greater ease and speed other towns of the vice-regency situated in the direction of Popayan, Cuenca and Quito to

Lima, and the following August they found themselves in Guayaquil.

Not only was the expedition able to propagate the vaccination throughout the countries of both friends and enemies, among the Moors of the Vasayas, and among the Chinese, but also to secure to posterity in the dominions of the King this benefit in perpetuity, first through the central societies established, and secondly through the discovery by Balmis of the existence of the "cowpox" or pox affecting the cows, in the valley of Atlixco, near the city of Pueblo de los Angeles; of the same discovery by his aid Dn. Antonio Gutierrez in Valladolid of Michoacan, and in the country around Calabozo of the province of Caracas, where it was found by the resident member of the faculty, Dn. Carlos de Pozo.

The great multitude of observations taken, which will shortly be published, showing the effects of the vaccine in different climates as well as its efficacy, not only in protecting from smallpox, but also curing simultaneously other diseases, will in still greater degree make manifest the great importance to all humanity of this expedition, of which there is no similar example in all history.

Although the object of the expedition was simply to communicate the vaccine from arm to arm, to instruct everywhere in this practice the members of the faculties, and to establish rules concerning its conservation, the director has omitted nothing which would make the expedition useful to science and to agriculture. He brings with him a considerable collection of exotic plants, he has caused drawings to be made of the most beautiful objects in natural history, he has collected important facts and dates, and among the list of benefits which make him worthy of the gratitude of his country, not the least is his splendid collection of fruit trees, and other useful productions which he has brought alive, and which being propagated in similar climates of the peninsula, will make the expedition as memorable in the cause of agriculture as in that of medicine and humanity. It is hoped that the sub-director and his three assistants directed to bear the same gift to Peru, will soon return from Buenos Ayres, after they have traversed this vice-regency, that of Lima, and the districts of Chile and Caracas, and that they will bring the collections and observations acquired in following out the recommendations which were given them by the director, without allowing themselves to be distracted from their philanthropic mission, which was so earnestly recommended them by His Majesty for the benefit of the human race.

REMINISCENCES: THE TRANSITION OF SURGERY TO ANTISEPTIC SURGERY.

By MARTIN REGENSBURGER, M. D., San Francisco Polyclinic.

In the early months of 1875 I had the extreme pleasure of being a witness to one of the most marvelous reactions in surgery.

At the Allgemeine Krankenhaus in Munich, v. Nussbaum, professor of surgery at the University of Munich, one day, in utter disgust, threw down his knife with the expression that he would never operate another case in that hospital. Every case he operated was infected with nosocomial (hospital) gangrene. Every wound that came into the hospital, even the slightest lesion such as a panaritium, would become infected. The mode of procedure in the operating room at this time was as follows:

The nurse would bring into the operating room a tinker's soldering pot and we students would take the soldering iron and sear the infected

wounds, reminding us of the days of Ambrose Paré. For the benefit of those who have not seen hospital gangrene, I myself having not seen it for the last 35 years, I would state that it was one of the most common complications of wounds, and its history was marked by a fearful mortality and so inseparable was the disease once assumed to be from hospitals, that Poteau (1783), the first historian of the disease, himself a sufferer from it, proposed the inquiry whether in view of the facts "hospitals were not more pernicious than useful to humanity."

The symptoms of hospital gangrene are described as follows by Guthrie:

The wound attacked by hospital gangrene in its most active form presents a horrible aspect for the first 48 hours. The whole surface has become of a dark red color of a ragged appearance, with the blood partly coagulated and apparently half putrid, adhering at every point. The edges are everted, the cuticle separating from one-half to three-fourths of an inch around with a concentric circle of inflammation extending an inch or two beyond it. The limb is usually swollen for some distance, of a white shining color, not peculiarly sensible except in spots; the whole of it being edematous or pasty. The pain is burning and unbearable in the part itself, while the extension of the disease generally in a circular direction may be marked from hour to hour, so that in from 24 to 48 hours nearly the whole calf of the leg or the muscles of a buttock or even the wall of the abdomen may disappear, leaving a deep great hole or hiatus of the most destructive character, exhaling a peculiar stench which can never be mistaken and spreading with a rapidity quite awful to contemplate.

The great nerves and arteries appear to resist its influence longer than the muscular structures, but these at last yield. The largest nerves are destroyed and the arteries give way, frequently closing the scene, after repeated hemorrhages, by one, which proves the last solace of the unfortunate sufferer.

The extension of this disease is in the first instance through the cellular structures. The skin is undermined and falls in, or a painful red, and soon black, patch is perceived at some distance from the original mischief, preparatory to the whole becoming one mass of putridity, while the sufferings of the patient are extreme. The surface of the wound soon becomes a sticky, pulpy mass of a grayish color. This substance cannot be wiped off and it resists the usual washings. If at this stage the further progress of the disease be not arrested, the patient succumbs, as from a fatal form of septicemia.

Lister's achievements were just in embryo at that time and but little was known about antiseptic surgery; there were many pros and cons. Such men as Billroth bitterly opposed the whole technic of Lister, saying that it was not the technic, but that simple cleanliness and hot water would accomplish the same results.

Pasteur's theories at that time were also in their infancy. The general theory was that there was only one source of contamination and that was the

air. Upon this theory Lister based his ideas and thought by keeping the air, and especially unclean air, from wounds he would prevent infection, etc.

v. Nussbaum determined to send his first assistant, v. Lindpaintner, to Edinburgh for the purpose of studying Listerism. In about two months he returned to Munich with all of the paraphernalia of Listerism; carbolated gauze, mackintosh (a waterproof rubber sheet), protective (a greenish oilsilk or linen), drainage tubes and catgut ligatures, and last, but not least, a steam spray.

Before the operation the steam spray was set to work and the air was thoroughly saturated with carbolic acid (mind you no gowns, no thorough cleaning nor disinfecting of the hands, etc.), then the patient was brought in and the spray was played over the field to be operated upon, and kept up to the end of the operation. Many times the operator would have to stop for the reason that his hands became absolutely anesthetic from the carbolic spray. The sutures were either catgut or silver wire; then the spray was taken away and the protective was placed directly over the wound, then eight layers of gauze, then the mackintosh and then the gauze bandage. The results were simply marvelous. If the technic was properly carried out all wounds excepting those near or in connection with the mucous membranes healed by first intention. It was marvelous to see the change in that hospital.

I remember v. Nussbaum operated upon a patient in a bathtub for loose cartilages in the knee joint, under water, for fear the air might infect the wound; it did not seem to matter what condition the water was in. Under Listerism I saw the same operation with splendid results.

About six months after Listerism was introduced into Munich, v. Nussbaum invited Lister to Munich and introduced him to the students at the clinic, and this is where I first met Lister, the most modest man that I have ever met; a man about six feet tall and extremely bashful; while he was being eulogized before the students his lips would twitch from embarrassment. After Nussbaum had praised him up to the skies, calling him a second Saviour, Nussbaum fell upon his neck and kissed him and his embarrassment and modesty were really painful to observe—the great man almost collapsed.

In 1876 I visited Lister in Edinburgh and was received by him as though he had known me for years, and I dined with him on an average about twice a week for four months. His wife was the daughter of Syme, and she was just as homely as her father.

At the old Edinburgh infirmary, which had outgrown itself, it was not uncommon to see three patients in one bed, two lying one way and one the other, and all doing well, septicemia, etc., being a thing of the past.

In 1873 I took a semester at Berlin. Among the courses I took one with v. Langenbeck on operative surgery on the cadaver, from six to eight in the morning; one morning I remarked to one of my colleagues that the cadavers were all black.

On close inquiry it was found that we were operating upon cholera cadavers, which at that time seemed almost criminal.

An episode which has never been published, of which I was a witness, occurred at a post mortem made by Virchow. It was at the medical clinic of v. Frerichs. A case of trichinosis was being demonstrated, and in order to see the trichina v. Frerichs took a harpoon, dug it into the patient's biceps (antiseptic precautions were absolutely unknown), and the piece of muscle was placed under the microscope and the trichina was visible; four days later the patient died of pyemia, and was posted by Virchow, who prefaced the post mortem with the remark, imitating in his solemn way the speech of v. Frerichs, "gentlemen, another sacrifice to our science."

In Paris I saw Verneuil, when the thermo cautery was in its infancy, take a grooved sound and introduce it into the bladder, running the cautery along the sound into the bladder for the purpose of removing a stone.

Dr. Levi C. Lane was also present at this criminal operation. What became of the patient I never could find out.

When I came back to San Francisco I brought all of the material necessary to carry out Listerism and introduced it into the City and County Hospital under Douglass, Professor of Surgery in the Medical College of the Pacific, and later the Cooper College.

Douglass was an excellent surgeon, but very slow to introduce innovations, and in using the spray he would exclaim "take that damn thing away," then I would say it was part of the technic and he would be satisfied for a few minutes and again would say "take it away." His hands would become numb during the operation and he would have to stop for a few minutes, but his results were fine.

PRESENTATION OF PATIENT TWENTY MONTHS AFTER OPERATION FOR UTERINE CANCER COMPLICATED WITH UMBILICAL HERNIA.*

By C. J. TEASS, M. D., San Francisco Polyclinic.

This good woman who has kindly consented to come before you to-night is sixty-one years of age, and as you see is very large, weighing 220 pounds. Her past medical history has nothing of special interest as far as her recent trouble is concerned, though as a child she had scarlet fever and diphtheria. Her menses began at the age of twelve years and were always painful, and she would flow seven to ten days. Was married thirty-four years ago and has had two children with normal deliveries. The youngest is twenty-three years of age. She has also had one miscarriage. Nine years ago patient ceased menstruating entirely, and did not see any sign of blood from the vagina for a year and a half, when she noticed a little bloody discharge, but as she was told by kind advisers that the menses would sometimes return, she did not bother further about it, until she began to have real hemorrhages with great pain. This caused her to seek relief at the hands of her physician

down in Texas, who at once sent her to the hospital to a surgeon for operation, but when the surgeon examined her he told her the liver was involved so he could not operate on her, and as she had a brother here in California was advised to come out here, which she promptly did, reaching here April 9th, 1912. She came to the clinic at Cooper Medical College, where I was then working on April 11th. A section was taken from her cervix and sent to the laboratory and report came back with diagnosis of malignant epithelioma. She entered Lane Hospital, and on the morning of April 20th, Dr. Beasley kindly cystoscoped her bladder and catheterized her ureters, and as these did not seem to be involved in the growth, though the right side was fixed and the upper third of the vagina was involved and a large umbilical hernia was also present, I determined to do as radical an operation as possible, owing to the intolerable condition the patient was in, and begging to have something done. A median abdominal incision was made extending not quite to the umbilical line, as you see by this scar. The bladder and rectum being freed from the uterus and the pelvic contents being dissected out en masse with the upper third of the vagina, leaving the bladder, rectum and ureters intact. A large gauze drain was packed over the raw dissected area and its end pushed out through the vagina. The peritoneum was now carefully closed over this so as to exclude the abdominal cavity proper. The umbilical hernia was now seen to consist of an enormous quantity of necrotic omentum; this was fairly pulled out by the handfuls, the omentum ligated off and the fascia overlapped *from within the abdominal cavity*, with the result that you now see the umbilicus retracted instead of protruding. The patient since the operation has been passing more or less sugar in the urine, otherwise is apparently well and enjoying life.

The patient whom I have presented to you is one of an even half dozen I have had the opportunity of operating upon for uterine malignancy during the last three years, and though I am cognizant of the fact that, so few cases before the five-year limit have absolutely no meaning when thought of from a statistical point of view, but when considered from an humanitarian standpoint it is not only justifiable but obligatory that these patients be given the benefit of such relief. Of the six cases referred to there has so far been one death, and that was primary. The poor woman not only had an advanced uterine carcinoma, but the cecum was involved with a translucent parchment-like area of about the size of a fifty-cent piece which ruptured at the slightest touch, and though this was carefully resected the patient died of peritonitis. I am likewise mindful of the fact, however painful it may be, to my way of thinking, that the operation is not only *not* popular among the laity but with a great majority of the members of the medical profession as well. The principal reason for this deplorable state of affairs is undoubtedly due to its high primary mortality, which, as Peterson states, would reach twenty-five per cent. if all reported and even fifty per cent. of all unreported cases could be collected. With this

* San Francisco Polyclinic Clinical Society, Dec. 3rd, 1913.

fact clearly in mind I have no hesitancy in strongly urging the radical operation to every patient who may chance to come under my care, and console myself with the all-important fact that, without operation a rather slow, distressing, loathsome death is inevitable. It necessarily follows, however, that the entire status of the case be put up clearly to the patient herself, in the light as we ourselves understand it with the present state of our knowledge, and I have to meet my first case where the rational patient herself will not only submit but actually demand that she be given the chance of relief, though she is at times compelled to do this in hostile opposition to other members of the family or perchance some kind medical adviser as well.

Any man of experience who has given the subject much thought, will necessarily agree with Dr. Peterson of Ann Arbor, to the assumption that the operation under discussion would be more generally adopted if at first the profession and the laity could be so educated regarding uterine cancer that the disease could be recognized earlier and the patient come to the surgeon when local and general conditions combine to bring about a low primary mortality and, secondly, if the occasional operator could be eliminated, for which, if any operation, this certainly requires some preparation in the line of specialization.

The time limit of the paper will not permit of taking up all the symptoms of uterine carcinoma, but I cannot refrain from speaking of the absurd pertinacity with which the laity, and I am ashamed to mention many members of the medical profession, associate hemorrhage at the menopause with a perfectly normal transition which the woman is supposed to "go through" at this period of life. This pathetic sad "belief" is responsible for a world of suffering, and the untimely death of many a poor woman. Even perchance, the woman may have been examined and some sort of thickening discovered in or near the uterus she is told that it is a tumor and will disappear when she gets through her changed life. (This may be the change to the next life.) I have in mind one such poor, patient woman who came to me a little over a year ago who had been receiving advice for five years previously "going through change of life," until her vessels had been so drained of blood, as the result of a large myxofibroma undergoing malignant degeneration, that the best that could be done before operation was to get her hemoglobin up to 28%, but fortunately she reacted from the operation exceedingly quick and is now wonderfully well and quite happy. In the present state of our knowledge it would be well if every case of metrorrhagia in women past thirty-five years, was held to be cancer until the condition was proved.

I am afraid few of us in the past have taken sufficient thought to realize that in certain communities the death rate from cancer exceeds that of tuberculosis. The only excuse one can conceive of for there not having been as strenuous a campaign waged against cancer as there has been for some time past against tuberculosis is due to

the fact that, unlike tuberculosis, the cause of cancer is shrouded in mystery, for that reason we are not in as good a position to enlighten the public as to how the disease is to be avoided. But until such an epoch-making period illuminates the medical history I can conceive of no condition of things that would warrant us any longer in withholding from public edification what significant facts have been brought out by experience and observation up to the present time of this most appalling of all human afflictions. This is particularly true of cancer of the uterus, and again perhaps this is another reason why a more general definite knowledge of its early diagnosis is not manifest as there is a delicacy about printing such things, for the subject is naturally very distasteful to the general reading public, so outside of the literature which is especially intended for certain trained bodies of women, as for instance, the "Trained Nurse," we must mainly rely for the dissemination of knowledge through the "spoken word," such as lectures, personal conversation before women's clubs, or social settlement organizations, teachers, etc. Particularly every trained nurse should be made thoroughly familiar with its early symptoms, and it would be well to inaugurate reviews of the subject before every meeting of all medical organizations, for it is only by persistent reiteration of the subject that a lack of interest can be avoided, and though it is bound to be a long, hard fight we can rest assured that by persistence and time results will certainly come; again, by the time the people become aroused by the wonderful importance of the subject, there will naturally be created a desire for them then to read every authoritative article they can get on the subject, so in this way it would not be a great while before cancer education in this country would even excel that prevailing abroad.

Weibel states that the primary mortality in Wertheim's Clinic was 30% in the first 100 cases, but this number was constantly reduced, amounting in the fifth hundred to only 15%, and is now under the last 175 cases, just 9%, including every death in any manner connected with the operation. The women died mostly of peritonitis, paralysis of the intestines, degeneration of the heart, embolus, pyelonephritis.

He goes on to state that, "This excellent effect of their efforts to diminish the danger of the operation was not attained by any especial selection of the operated cases; it is a success of continually improving the technic and the correct use of the anesthetic."

Now I wish to take exception to this over-enthusiastic statement, especially from the point of selected cases, as I know from personal observation from examining patients with Dr. Weibel in this very clinic, that the cases for the radical abdominal operation are selected with considerable detail and care. They refuse to operate on cases which they consider hopeless for permanent cure—even though just temporarily relief could be afforded to the poor, suffering woman, with always that element of hope which adds another chance. This is the usual continental favoring of the pure-

ly scientific, rather than the humanitarian side of the question. And yet with this careful selection their statistics show a fifth of all the cases examined in the clinic permanently cured.

Clark, of the University of Pennsylvania, while working in the Kelly Clinic at Johns Hopkins University, as far back as 1895, advocated the radical abdominal operation, three years before Wertheim's, was encouraged by Dr. Kelly himself and after considerable experience he deducted the following conclusions:

1st. The absence of any known law concerning metastasis for the glands of the side of the greatest local involvement may be free while the parametrium or higher glands of the opposite side may show microscopic foci.

2nd. The unreliability of the microscopic appearance of a gland in determining metastasis, for a large, palpable gland may be removed painstakingly from the bifurcation of the iliacs found to be of an inflammatory character only, while an invisible lymph radicle, or a microscopic focus, immediately adjacent, may be the lodgment place for cancer cells.

3rd. The absence of any law as to what type of case gives metastasis. A very limited local process may show wide glandular metastasis, whereas the opposite may be true in extensive involvement.

4th. The peculiar distribution of metastasis in that occasionally a low group of glands may escape metastasis, whereas those above are involved.

From my own limited experience I am in thorough accord with these deductions, hence my excuse for always harboring the hope of being able to afford some degree of relief to any poor sufferer who may put her fate in my hands, whether the condition on the surface of things seems incurable or not.

Since formulating the preceding notes, a patient was admitted to my service at the City and County Hospital, seeking relief from the effects of excessive menstruation and a distressingly foul discharge. Upon the day of her admittance the interne—Dr. Silverman—removed a small section from a cauliflower-like growth involving the cervix and sent the same to the pathologist. The day following this, the patient developed a slight rise in temperature. This slight added toxemia to an already profound anemia was sufficient to interfere with the proper action of the cells of her brain to such an extent that she became imbued with the idea that she had been operated upon and was well, so it was with difficulty that I could examine her at all. Indeed, I was finally compelled to place her on the table by main force and thoroughly cauterize the growth of the vagina and cervix. After this she was so decidedly improved in every particular that she graciously submitted to several repetitions of the same treatment until she had finally reached such a physical condition that I had determined to do the radical operation, when she suddenly determined to leave the country for her home in Germany and left the hospital before I could persuade her to submit to such a radical piece of work.

This was one of those rapidly growing malignant involvements without giving rise to any pain at all. Indeed, it is only too sad that these poor unfortunate beings do not suffer severely with pain right in the beginning of the malignancy, for if such were the case they would be driven to seek relief sufficiently early to make one reasonably certain in holding out to them the reasonable promise of permanent cure.

THE GREEN OPERATING ROOM AT ST. LUKE'S HOSPITAL.

By HARRY M. SHERMAN, A. M., M. D.,
San Francisco Polyclinic.

The difficulty I have had in seeing into the mouth of a small child to properly trim and suture the soft palate and uvula, in cases of cleft palate, led me, some ten years ago, to use black cloths around the mouth instead of the ordinary white toweling. With the white environment, the hollow of the mouth is in the deepest shadow and cannot be comfortably seen, unless it be specially and over illuminated, as by the wearing of a headlight by the operator. With the black environment, however, the mouth is in the high light, not in the shadow, the pupils of the operator are not dominated by the light reflected from the white towels, and ordinarily bright daylight is ample illumination for the work in the back of the mouth.

The discomfort I have had in the present-day white operating rooms led me to suggest that we have dark floors and wainscots in these rooms, so that the operator who looks up from a wound shall not encounter a glare of light and find his eyes useless for a moment, as he looks back into the less well illuminated wound. The color scheme, it seemed to me, should start from the red of the blood and of the tissues, therefore I advised that green, the complementary color to red, should be chosen for the color of the floor and wainscot. The particular shade of green to be selected was that which was complementary to hemoglobin, and it was found to be the green of the spinach leaf. Incidentally it may be said that the iron in the chlorophyll of spinach is said to be in the same chemical combination as is the iron in hemoglobin, but I know nothing of the value of this, in making spinach green complementary to hemoglobin red.

A room painted in this way, the floor and the walls for six feet from the floor, a bright spinach green, and all above a glazed white, was matched for use against a room painted a glazed white—floor, walls and ceilings—in the little operating pavilion built at St. Luke's Hospital just after the fire. No one who could get into the green room to do an operation ever went into the white room, and after some months of this experience the point was accepted as settled sufficiently to warrant the innovation of a room similarly colored in the operating suite in the new hospital. Here, however, we could not get in tiles as close an approximation to spinach green as we could in paint; the tile for the floor had to be duller and darker and that for the wall darker, but the two shades harmonize, and answer the purpose perfectly of pre-

venting the bright daylight from being reflected upward from walls and floors into the eyes.

Above the level of the six-foot green wainscot is white encaustic tiling to the ceiling, and the ceiling itself is a bright buff. This arrangement imitates fairly well the optical environment out in the fields or among low bushes, where the ground of the surroundings, to above the level of the eyes, is green, and the sky overhead is full of white daylight. This again is the optical condition for which the eye was originally adapted by natural selection, and it seems only right to reproduce the condition for the eye when it is to be relied upon for quick and accurate work; while the conditions of greatest eye-strain—the dead white and glare of snow on ground and bushes—is the optical condition reproduced by the white rooms and the white furnishings.

The green room is lighted by a window which gives us a northern light, and it reaches from about three feet above the floor up to the high ceiling. At first this window was glazed with ground glass, but it was at once seen that the room would bear much more light than the ground glass permitted, for the excess of light, the useless light which fell upon the floor and the lower

that the light reflected into the operator's eyes by the white sheets and towelings was as dazzling and as interfering as was that reflected from the floor, and so the same color scheme was followed out, and green toweling and green sheets of galatea were provided. The color in these, however, did not stand the superheated steam in the sterilization. They became a dingy gray. I then decided to surround the whole operation field with black, as giving a surface from which no light whatever could be reflected, using it around all wounds, as I had used it around the mouth in cleft-palate operations and around the vagina in operations there. I not only had sheets and towelings of black, but I had black gowns made, and the coverings for the instrument tables were all of black, and I found that they were exceedingly satisfactory. The only objection I have heard urged against them was the superstitious fear that people coming up for operation would see this sombre accoutrement and consider it a color of bad omen. This has proved to be a groundless fear, for patients who have had work done upon them under local anesthesia have expressed no objection to the black dress of the operator, nurses and room.

In the new hospital, as in the old operating



GREEN OPERATING ROOM

part of the walls and could not be reflected thence on to the operating field, but could be reflected from a white floor and white wainscot in the eyes of the operator, was all absorbed by the green floor and wainscot. Therefore, the ground glass was taken out and transparent glass put in, giving a distinctly brighter illumination of the operating field. In working with this it was soon noticed

pavilion, there is a very decided preference among operators for this green room, as against the other operating rooms, which are finished in the conventional encaustic tiling; and those operators who have taken advantage of the whole equipment, and have used the black table-coverings, towelings and sheets, and the black gowns, have appreciated the improved optical conditions which they gave, for

the eye was not compelled all the while to receive light rays from every direction when the only rays it wished to receive or needed were those that came from the wound itself. Under ordinary conditions, the eye might be considered as trying to keep out, by pupil contraction, all the extraneous light, and at the same time trying to let in, by pupil dilation, all it really wished to get from the wound; all of which was a definite over-strain of the accommodative and visual capacities of the eye, which would conduce certainly to nerve-fatigue and consequently to general fatigue. Indeed, it has not been uncommon in this and other hospitals to hear nurses who had to spend a good part of the day at their duties in the operating room, complain of the effects of the brilliant white environment.

I think we should have long ago learned this lesson in optics from our co-workers in the laboratories, for no one ever saw in a laboratory where the microscope was to be used, white tables, benches and shelving. On the contrary, these are stained a dead black; and in this connection it may be mentioned that some years ago Dr. George M. Gould, then of Philadelphia, suggested that newspapers should be printed in white letters on a black ground, for in the present printed page, with black letters on a white ground, we see the white ground but not the black letters, and we read really from the shadows of these letters, cast on the retina. On a black page with white letters we would see the letters and not the page, and while the effect, so far as understanding was concerned, would not be different, in the one we would be conserving eye-energy, whereas in the other we would be and are overworking the eye unnecessarily. The eye is a long-suffering organ, and we are conventional people, resistant to innovations, but whoever takes the trouble to study, either theoretically or practically, fatigue in its relation to efficiency, will learn that the conservation of energy, even in such matters as saving eye-work, where that is possible, is a valuable consideration, and those of us who have long and difficult operative procedures to do will find that this conservation may easily be a deciding factor in success or failure of fine manipulations.

We have tried to test light efficiency in the two kinds of rooms by a test-card such as is used by oculists, put into the bottom of a pasteboard box, which was lined with black. We found that it could be read, down to the smallest type, in either room, but it was plain that it was much more comfortable to read it in the green room, and that probably is the measure of the room's value—that you can work in it with much greater comfort than you could in a room where the optical conditions were more trying. The acme of discomfort would be, I should imagine, what I once saw in an Eastern hospital, where the operator was working in a brilliantly lighted, dead white room, and had to wear an electric headlight to over-illuminate his field, in order to see in spite of the glare. In the same room I provided myself with yellow spectacles to put on to protect myself from the discomfort of the light.

BLINDNESS FOLLOWING INJURIES TO THE BACK OF THE HEAD.

By L. NEWMARK, M. D., San Francisco Polyclinic.

Given a patient who has sustained an injury to the back of his head and is found to be deprived of his power of vision without showing any ocular changes: the physician will find in the following observations what he may expect in regard to the restoration of sight:

There is on record¹ the case of a boy, aged 12 years, who one morning at a quarter past eleven o'clock was run over by an automobile. He was immediately taken to a near-by hospital, where he revived after very brief unconsciousness and loudly lamented that he could not see. Between lambdion and external occipital protuberance there was a laceration, the periosteum was separated from the bone, but there was no fracture. There was total amaurosis, all sensibility to light was absent. The pupils, a little more than middling wide, reacted to light, but very sluggishly. The backgrounds were normal. By 2 p. m. he could already perceive large white objects, at 6 p. m. he could count fingers at a short distance. There was now found a right homonymous hemianopsia, the dividing line almost reaching the fixing point. Pupillary reaction had become prompt. There was an indication of amnesic aphasia. On the day following the accident the visual fields had extended toward the right, and in another day they had become normal. There was no diminution of visual acuity.

This was a very transient blindness. The boy's perturbation might have suggested traumatic hysteria, but the hemianopsia would seem to disprove that. It looks rather as if the visual centers in both occipital lobes had been affected, the right hemianopsia remaining for a while after the right occipital cortex had recovered. We will agree with the author in assuming a *commotio cerebri*, for the restoration of vision was too rapid for a hemorrhage.

In the following case a bilateral occipital hemorrhage appears to explain the blindness which ensued upon the trauma to the skull:

F. M., a youth of 21, was engaged on January 15, 1903, in a prizefight, which was terminated by a blow upon his jaw. He was thrown with great force upon the back of his head and the impact was so violent that it drew from the experienced referee the exclamation that it would prove fatal.

When I first saw him, eleven days afterward, there were the signs of a contusion on his occiput, but the surgeon had not discovered any fracture of the skull. The patient was passing urine and feces into the bed, and a decubitus was forming on the sacrum, but he was not unconscious, for, although he generally lay motionless, with his eyes closed, he could be roused by persistent calling, and would then give short, pertinent answers.

It could be made out that there was a reduction of motor power in the right extremities, but not in the face or tongue, and of sensibility throughout the right side, including astereognosis of the right hand; but the knee-jerks, heel-reflexes, and the reflexes of the upper limb were not livelier on the right than on the left side. There was a distinct Babinski extension sign in both feet. Hearing with the right ear was evidently affected, for he did not recognize the presence of a watch even

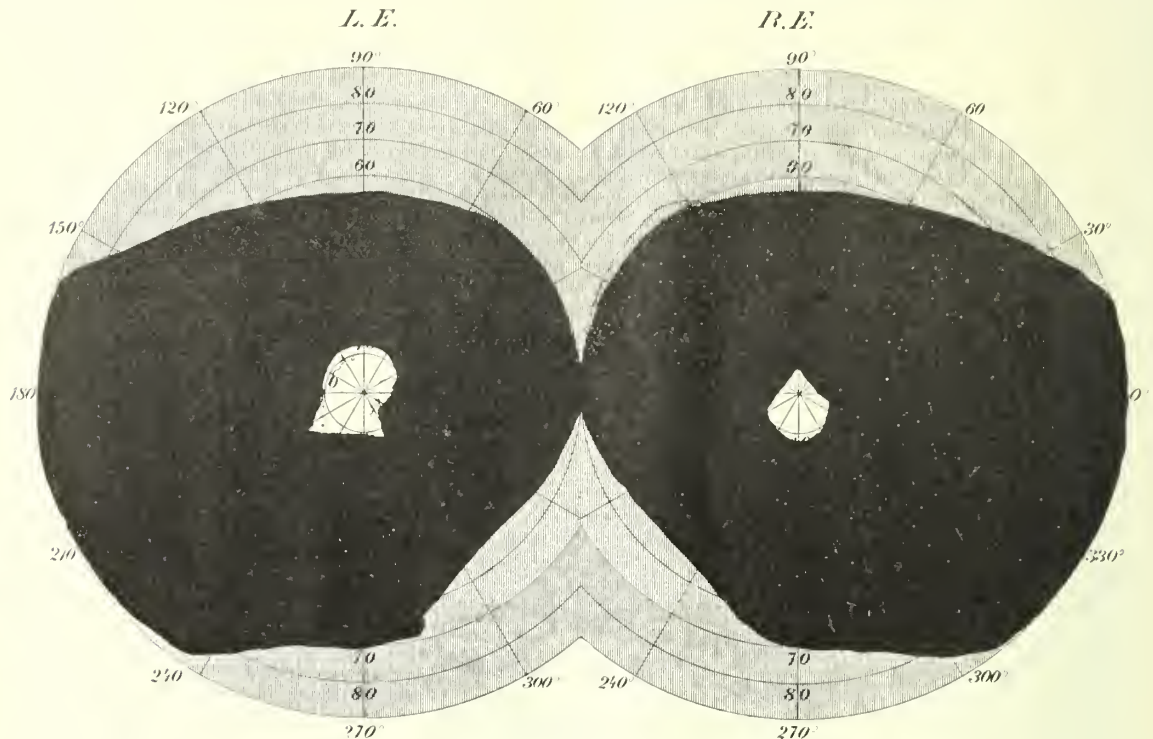
1. Camill Hirsch. Ueber passagere Blindheit durch *Commotio cerebri*. Deutsche Medizinische Wochenschrift, 1910, page 1436.

when it was in contact with that ear (which was not found to have been injured), while on the watch being applied to the other ear he would say he heard "the ticking of a clock."

What interests us now especially, however, is that he seemed to be blind. The sudden approach of a finger or other object to either eye never caused him to wink. When asked to recognize a face close before him he would ask "Where?" and fail to see it. When the light of a lamp was concentrated upon his pupils by means of a lens he gave no sign of perceiving it. In no part of the field could he be got to evince sight of any object, no matter how bright. And yet he persisted in saying that he could see. To the question, "Frank, can you see?" he regularly replied, "Of course I can see."

For reasons which it is unnecessary to set forth here we had no opportunity of testing the visual fields with the perimeter until the 24th of April. The diagrams made on that date by Dr. J. R. McMurdo show the small residual fields for white, and another set, the work of Dr. E. K. Hopkins, made in November of the same year, exhibit only a slight difference. Such tests as were made on one or two occasions some years later did not show a material widening of the fields.

Without entering into many interesting details which would not be relevant to the object just now in view, it remains to be said that the patient's memory suffered severely from the injury to his head. There was retrograde amnesia and for a considerable period an inability to retain new impressions even for an extremely brief time. The



FIELDS FOR WHITE OF F. M.

By February 9 he seemed able to distinguish movements of a hand, but when asked whether he could discern anything in the room he drew upon his imagination and answered "A kid" or "A man with a bicycle." Nine days after this there was the first demonstration of visual power exceeding the mere ability to distinguish light and darkness and to perceive the movements of an object: a watch being held before him, a little below the level of his eyes, he slowly made out that it was "twenty-eight minutes past ten,"—which was correct. It seemed clear now that he had good central vision, but only a very limited field.

On February 25 it was noted that at a distance of six feet he counted fingers correctly, and recognized and named a number of other objects successively held up before him. This naming of objects would suggest the absence of amnesic aphasia, but this aphasia was found to exist in regard to colors on March 5, when, although he could find the true appellation for "white," he could not find it for "red" or "blue," but showed his ability to distinguish colors by selecting the correct name from among several mentioned to him. Two weeks later, however, he had no difficulty in identifying colors and naming them. He read with ease. Throughout the whole period of observation there had been no changes in the ocular apparatus.

hearing returned early to the right ear, the right extremities regained their motor power, and there occurred gradually a not inconsiderable improvement in his memory; but the astereognosis of the right hand remained, associated with a similar disturbance in the foot, and the defects in the memory were never overcome sufficiently to make it trustworthy. He died in 1912 in consequence of an ulcer of the stomach, as I was informed. The information reached me too late to enable me to procure the brain.

From such a case as the foregoing the attendant upon a patient who is, or appears to be blind after an injury to his head which has not affected any part of the eyes will derive the hope of at least the restoration of central vision. What will naturally strike one is the patient's persistence in the denial of blindness when the observer cannot convince himself of the existence of sight. In cases of softening of both occipital lobes temporary amaurosis is commoner than permanent blindness; and these patients too may be as unconscious of their blindness as the patient just described. In some of them one will suspect that in a minute circle around the fixing point there remains sensibility to light.

In still another instance which I have observed of the effect upon the vision of a trauma to the back of the head the return of a useful degree of sight was delayed much longer than in the case which I have cited and the one I have described. We are again impressed by the patient's indifference to his blindness. He is a child who in October 1912, when he was a little over four years of age, fell from a moving vehicle. He suffered a fracture of the clavicle, had a large hematoma at the occiput, and remained unconscious for three days. The X-ray satisfied some of those who attended him of the presence of a fine linear fracture in the occipital bone, concerning which, I am informed, others were not free from doubt. When the child revived, he was found to be blind. The oculist who first examined him declares that the backgrounds of the eyes were normal. A number of observers who occupied themselves with the case during the six months following the accident could detect no evidence of vision, but the child never complained, and he displayed none of the timidity to be expected in those who walk in darkness. "He floundered about," says one who saw him in the earlier period of his blindness; "he went at things as if he did see them," says another who examined him later. The little fellow himself, when questioned about his perceptions, declared that he saw nothing. He knocked against things continually, or fell down stairs. But after the lapse of about six months he regained sight: how much, it has not yet been possible to determine accurately, for he cannot be induced to fix his gaze with sufficient steadiness to make a perimetric register possible. It is only his lack of understanding, proportionate to his years, and his playfulness which prevent precise examination, and as he is under the observation of a skilful ophthalmologist it is to be hoped that time will bring its opportunity for trustworthy results. That time will bring further change in his visual power I am disinclined to assume, for what has been restored seems not to have increased for some time past. His central vision seems to be good, but we think that the field is very narrow. If an object be placed upon the carpet, from the color of which its own color differs so little that it requires considerable visual acuteness to detect it, the boy will pounce upon it from a distance when it comes within his field; but in his search for it, as also for brighter objects, his periscopic efforts are abnormally prolonged.

There has been a divergence of opinion as to the nature of the visual trouble in this case. It has been already stated that the oculist who first observed the patient after the accident considered the discs normal, and that is the opinion of the oculist under whose care he is at present. Others declare, with more or less doubt, that the discs are atrophic; one expresses the view that there are atrophic changes in the discs, but that the loss of vision is not to be ascribed entirely to these, but in greater part to lesions in the optic pathway, and that the atrophy is a descending one. And, finally, the deprivation of vision has been interpreted as a symptom of traumatic hysteria.

My own judgment is that the blindness in this child was caused, like that in the other cases, by a traumatic affection of the occipital lobes, shock being assumed sufficient in the first patient and hemorrhage appearing more likely in the second and third. It is hoped that from this little group some practitioner, who may find himself in the presence of a case similar to those which compose it, may derive justification for relieving anxiety by a comparatively favorable prognosis.

RECOLLECTIONS OF THE LISTERIAN EPOCH.*

By CHARLES G. LEVISON, M. D., San Francisco Polyclinic.

The subject that I have chosen for my paper this evening is of perennial interest, for it has exercised an incalculable influence upon the evolution of modern medicine.

The name of Lister is so well known to the fraternity that it needs no introduction, but unfortunately this is not the case with the layman, who is quite uninformed regarding the remarkable achievements that have been accomplished in medicine, and it would seem an almost hopeless task to properly educate him. In this connection I have often, in conversation, inquired of people whether the name of Lister was known to them, and the response has almost invariably been returned: "Oh yes; he is the man that makes the Listerine." I repeated this to Sir Charles Ball when he was here delivering the Lane lectures a number of years ago, and he was very much amused. He laughed heartily and said that he was going to tell Sir Joe about it. At that time Lord Lister had not yet been elevated to the Peerage, which event took place in 1897 and it was the first time that any medical man had been so honored.

I have been particularly interested in Lister as a man as I had the privilege of knowing him personally. It was in the summer of 1892 while he was still teaching surgery in Kings College, London. One year later he retired from active work.

I visited him as a student and was received most graciously, and during the several times that I saw him he addressed his remarks particularly to me instead of to the students. He took me through the wards and he removed the dressings from the patients to demonstrate the action of the cyanide of mercury gauze that he had introduced into surgery a short time before. His modesty and simplicity were extreme and one would never have recognized him as one of the most important influences of all time. An example of his great modesty was shown at an International Medical Congress at which both he and Pasteur were present. In an address that he delivered, he stated that Pasteur was the only one that deserved any credit for the discoveries that he (Lister) had made.

An episode occurred some 12 years ago while I was visiting Dr. H. O. Marcy of Cambridge, Mass., and in my opinion it is of great interest. Marcy was the first to bring the antiseptic system to the United States and it is a commentary upon

* Read before the San Francisco County Medical Society, March, 1914.

the difficulties that the innovator has always experienced in medicine. The opposition that Lister had to overcome previous to the time that his method was accepted in England was only a repetition of what many others had experienced before. The bitterness and animosity that he was made to feel were accorded to Marcy upon his return to this country. The following is the story as it was related to me by Marcy:

Marcy went abroad in 1869, having graduated from Harvard Medical School. He spent some time in Berlin, after which he contemplated going as a special student to Simpson at Edinburgh.

His plan was interrupted because of Simpson's sudden death. As the great surgeon Syme was his successor Marcy decided to go to Edinburgh; when he arrived there he learned of Syme's illness and death. At the funeral services he was attracted to one of the mourners upon whose arm a tall lady in black was leaning. This man was conspicuous because it was apparent to Marcy that he was being avoided by all of those present. He inquired the name of this person and he was informed that he was Syme's son-in-law, that he was "that man Lister who was talking about antiseptics," and the advice was given him that if he expected to receive any consideration in Edinburgh that it would be better for him to have nothing to do with Lister.

Marcy's curiosity was aroused and he determined to make the acquaintance of Lister, which he did. He was received with more than ordinary kindness and it did not take him long to be impressed with the results that Lister was obtaining in the few beds under his control, and he became a special student, each day growing more enthusiastic with the new doctrine in surgery. When Marcy returned to Boston in 1870 he had great difficulty in convincing the New England people of the merits of the new system.

Prof. Bigelow, who at that time was the greatest authority on surgery in New England, and many others, refused to be convinced of the value of the method and soon condemned it. Truth, however, finally prevailed.

As I listened to the story told me by Dr. Marcy, who possesses a powerful personality, I was very much impressed. Dr. Marcy has made many contributions to surgery; the introduction of the kangaroo tendon has been of great importance and as far as I have been able to learn he preceded Bassini and was the first to devise a radical operation for the cure of hernia.

The only experience that I have had with the Listerian method was in the Czerny clinic at Heidelberg in 1890; at this time Czerny was still employing the old carbolic spray as it was first devised by Lister. One came into the amphitheatre to find the windows and all of the paraphernalia of the operating room covered with steam produced by a spray of a 1% carbolic solution. This period represented the last gasp of the old carbolic system and shortly afterwards asepsis was adopted. The latter is based upon Koch's investigations and it still remains the only method in use.

The impression prevails among those who are

unfamiliar with the life of Lister, that it was largely a matter of accident and random thought that converted the teachings of Pasteur into a tangible system. It was Lister's good fortune to inherit a spirit of investigation from his father, who was a merchant, but who devoted his leisure to scientific pursuits, and he will always be known for having solved the problem of the achromatic system of lenses. He was a deep thinker, an active scholar and an excellent draftsman, so that it was quite natural that Lister's education should have been directed along the lines of investigation. As a student of Sharpey, the great London physiologist, and Graham, the chemist, Lister became interested in these sciences so that he was properly trained to take up the research work that involved endless patience and labor that extended over a period of many years. These experiments, together with the fact that he was a logical thinker, brought him to the point where with almost mathematical calculation he evolved the theory of antiseptics. This theory was based upon the researches of Pasteur, which were commenced in the early "60's." Having seen one of the original flasks employed by Pasteur in his experiments, I feel that there is a slight personal association with this era.

The epoch-making work of Pasteur in the field of fermentation is well known to every one and it was done when he as a young man had been appointed Dean of the Faculty of Sciences to the University of Lille.

In this city the products of alcoholic fermentation were the principle articles of manufacture and Pasteur proceeded to investigate these processes. Following out the experiments of Cayard Latour he was able to confirm the fact that those bodies which produced fermentation were the cells of a microscopic fungus. He also discovered that all true fermentations and putrefactions were caused by the growth of micro-organisms. He demonstrated and proved with absolute certainty that the doctrine of spontaneous generation was incorrect and that none of the minute beings that decomposed organic substances originated *de novo*.

The apparatus that made it possible for Pasteur to demonstrate to even the most skeptical that his experiments were correct, will be briefly described.

Glass flasks with narrow necks were filled with yeast, bouillon and other solutions that were known to decompose easily; these liquids were boiled and the necks of the flasks were then sealed with a blow-pipe. If the neck of a flask was broken, the air of that locality would rush in and occupy the existing vacuum and would carry with it living organic matter which would cause the decomposition of the fluid. When one of these flasks was opened in a room or in a forest, multitudes of growths would make their appearance, developing in the form of decomposition of the fluid contained in the flask; but if the flask was opened in a cellar long unused, where the suspended organisms might be expected to have fallen to the ground, there was no change in the fluid; when this was done in the Alps above the altitude of dust or floating particles, the result was the same. In other words,

when there were no floating particles in the atmosphere, neither fermentation nor putrefaction took place.

The second flask devised by Pasteur and the one of greatest importance in solving this complicated problem contained a clear bouillon; the neck was bent at a right angle with its open end directed downwards. Pasteur conceived the idea that the particles of organic matter in the air would not pass upward at any time but always gravitated. His experiments showed that even though this flask contained decomposable substances the contents never became contaminated. When the soup was placed in the flask it was filtered clear and then boiled. It was in 1890 that I saw the flask that I have mentioned above. It had been in the possession of Professor Kühne, the Heidelberg physiologist, for 25 years. The fluid was absolutely clear and it confirmed without controversion Pasteur's original observations, which of course had been accepted as correct many years before.

The far-reaching influence of this last experiment has been recognized by the French Government, and there is erected in the court of the Sorbonne a statue of Pasteur holding in his hand one of these flasks with its beak turned downwards.

It was these experiments that gave Lister his first thoughts in his attempt to obviate the terrible hospital gangrene and the virulent suppurations that occurred in almost every wound that was brought into the hospital.

The layman of this period has not yet emancipated himself from the traditions that associated the hospital with death, and despite the fact that surgical operations at the present time are generally successful, the horror of hospitals has never been entirely eradicated from the public mind.

In order to appreciate what the practice of surgery consisted of prior to the Listerian epoch one has but to refer to any of the older works to realize that it involved to a large extent amputations following compound fractures. The ligation of vessels, a procedure almost obsolete in the surgery of the present day, was also frequently practiced. Hospitals were in reality dead houses as a result of the terrible hospital gangrene that infected almost every wound that was brought into the ward. Operations were performed by surgeons clad in Prince Albert coats which were stiff with blood. The surgeon carried wax silk ligatures in the lapel of his coat and the instruments as well as the hands were washed only for the purpose of removing the blood. It was this state of affairs that Lister encountered when he became house surgeon to Erichson in 1855. Having been impressed by the scientific researches of Pasteur he was convinced that the minute particles which were later on revealed by the microscope to be germs were the essential causes of putrefaction. He began his logical thinking, which ended in the promulgation of the antiseptic system.

To me one of the most interesting illustrations of Lister's logical deductions was shown in his observation of the following:

He recognized that a pneumo-thorax with emphysema that resulted from a puncture of the lung

by a fractured rib produced no inflammatory disturbance because the air was filtered through the lung and hence contained no putrescible substances, while an external wound of the chest invariably produced a suppurative pleurisy.

He thereupon applied these principles to the treatment of compound fractures, which at that time, as above stated, was the most serious of all surgical conditions. The hospital situation had reached its climax and it was almost the consensus of opinion that a compound fracture should be amputated immediately to avoid subsequent death from hospital gangrene.

Lister believed that it would only be necessary to dress the wound with some material capable of killing the septic germs that were always present, and the problem that he encountered was to discover a substance that would accomplish this purpose without having too strong a caustic effect.

In the year 1864 he was impressed with an account of the remarkable effects produced by German creosote, which contained a large percentage of carbolic acid, upon the sewage of the town of Carlisle, where it was shown that a small quantity of this substance not only destroyed the odor of the lands irrigated with refuse material but that it also destroyed the entozoa which usually infested the cattle fed upon such pasturage.

The first paper upon the use of antiseptics in the treatment of compound fractures and abscesses was published in the *Lancet* in 1867, and it is a matter of comment that only last month I published a paper upon fractures, and the method advocated by me for the treatment of compound fractures was practically the same that Lister recommended almost fifty years ago. As above stated, compound fractures were considered the most fatal of all surgical injuries and it was Lister's idea to obviate the putrefaction of wounds brought about by the organisms introduced at the time of the accident or subsequently during the course of treatment. He had two indications to meet. The first was the thorough disinfection of the wound cavity by carbolic acid, the second being to produce a dressing that prevented contamination.

This is what is really being done to-day without particular modification, and it represents the most advanced idea concerning the treatment of compound fractures. Lister's aim was to produce a crust and to prevent it from becoming septic. In the treatment of abscesses he was able to treat the cold abscess as successfully as we can to-day. It was well known that when a cold abscess was incised that the patient would frequently die of amyloid disease caused by a mixed infection, and if death did not occur the resulting sinus was slow to heal. Lister recognized this and he succeeded by extreme care in preventing secondary infection by means of his carbolic putty, which produced an impervious dressing. In this way he was able to cure those unfortunates who would have otherwise been doomed.

The introduction of the buried ligature is another one of Lister's contributions, and it is one that has accomplished almost as much in surgery as the antiseptic system has done. Without the

buried ligature none of the operations that are now performed would be possible.

In the pre-Listerian epoch secondary hemorrhage was very common and it was not an unusual sequel to operations. Vessels were ligated with silk ligatures which were allowed to remain long; with the subsequent infection that was very common erosions of the larger vessels were frequent, and when the ligature cut into the lumen of the vessel secondary hemorrhage occurred. This was one of the conditions that Lister encountered, and by following the precept of the doctrine of *ergo hoc post propter hoc* he arrived at the conclusions that have exercised an influence upon surgery so great as not to be reckoned with.

He had observed at an early date that a blood clot in the absence of fermentative changes underwent organization. He also recognized that a piece of dead bone which lay exposed in the bottom of the wound of a compound fracture was absorbed instead of being exfoliated, as was the case in a septic wound. This, together with other observations, raised the question as to whether the ligature might not be cut and allowed to remain buried in the wound, for it seemed to him that organic material freed from septic organisms might be absorbed as occurred with bone and blood.

On December 12, 1867, which is a memorable day in surgery, he tied the carotid artery of a horse with silk that had been steeped in a watery solution of carbolic acid. The ends were cut short and the wound, which had been treated with antiseptics, healed immediately. The success of the experiment justified the application of the principle to man, and on January 29, 1868, Lister ligated the external iliac artery with a silk ligature that had been saturated with pure carbolic acid. The ends were cut short and the wound was dressed antiseptically, with the result that the healing was perfect. On December 31, 1868, he used the first catgut ligature saturated with pure carbolic acid, and from this time dates the new era in surgery.

Lister also introduced the drainage tube, which in itself is no small contribution.

There are two volumes, entitled "The Collected Papers of Lister," that give a full account of all the work that he has done.

350 Post Street.

REMOVAL OF THE CERVICAL GLANDS IN MALIGNANT DISEASE OF THE HEAD AND FACE.

By H. A. L. RYFKOGEL, M. D., San Francisco
Polyclinic.

No operation for removal of cancers of the head and face can offer any hope of permanent cure, in the majority of cases, unless the lymph glands that drain the affected area, and, as far as possible, the intervening lymphatics, are thoroughly removed. The gland-bearing tissues and, if feasible, the original growth, should be removed in one mass so as to avoid cutting or crushing the cancerous material and implanting or forcing cancer cells into the healthy tissues.

In order to accomplish this, it is wise not to consider the glands directly in the dissection, but

to study the fascias and areolar tissue whose removal would carry with them the glands draining the affected area. The surgeon should decide from the location and extent of the growth, and the palpable gland involvement, which groups of glands should be removed. The deep fascia covering the area containing these is uncovered by the turning back of suitable skin flaps, and removed together with the septa that leave its under surface and all areolar tissue and fat that lie between it and those deep structures that are to be left.

The deep fascia of the face, closely attached to the platysma, sweeps over the mandible, and being joined by numerous fibers that are attached to the lower border of the bone, forms a broad, dense sheet that covers the triangles of the neck.

It is thickest where covered by the platysma myoides and thinnest over the upper part of the posterior triangle.

It is particularly dense at the posterior angle of the jaw, where it sends strong fibers backward to form the stylo-maxillary ligament and splits to invest the parotid gland, which extends a varying distance downward between the two layers. At the anterior border of the sterno-mastoid it sends back a thin septum to form the posterior layer of the sheath of the muscle. Below it is attached to the clavicle.

About one-half inch posterior to the angle of the jaw and superficial to the deep fascia, the infra-maxillary branch of the facial nerve dips down on the neck and divides into the branch that supplies the platysma and a small filament which runs upward to the jaw and along its lower edge a short distance and then up to supply the depressor labii inferioris muscle. In the radical operation for cancer the infra-maxillary nerve is entirely removed, but in removing tuberculous glands many branches may be saved by sectioning the fascia as far as possible below the jaw and turning it upward.

The cervical lymph glands are divided into the following groups: The submental lie in a small mass of areolar tissue and fat, between the deep fascia and mylo-hyoid muscle and the two bellies of the digastric. They drain the lip and chin, the anterior part of the lower gum and floor of the mouth and the tip of the tongue.

The lower facial glands are situated below the fascia and around the facial vessels as they run over the jaw.

The submaxillary lie on the external anterior surface of the submaxillary gland and sometimes extend in a small group back of the deep fascia down to the hyoid bone.

To certainly remove them, the submaxillary gland must be taken away with the fat and fascia of this region.

These glands are liable to be infected in almost any cancer of the face and gums and anterior half of the tongue.

The external jugular glands lie on the surface of the deep fascia back of the platysma and below the parotid gland. They surround the external jugular vein for a varying distance, sometimes extending to its middle.

As they receive vessels from the submaxillary lymph glands, the indication for their removal is the same, and this is accomplished when the deep fascia is dissected off the sterno-mastoid.

The parotid glands lie partly in the substance of the parotid and partly under the anterior layer of its sheath; they are not often involved in the operable cancers.

The upper deep anterior cervical form a group surrounding the spinal accessory nerve and lying in front of the internal jugular vein, the external and internal carotid and common carotid arteries down to the omo-hyoid muscle. I have sometimes found a few glands behind the external carotid and the chain may extend along the jugular vein to the base of the skull. These latter must be attacked above the digastric muscle. This group must be removed in all cases, and if adherent to the sterno-mastoid muscle or internal jugular, these latter must be contained in the block.

The lower deep anterior cervical lie below the omo-hyoid, extending along the internal jugular, to its junction with the subclavian. They receive branches from the upper chain and should always be removed when this upper group is palpably enlarged; they also receive branches directly from the tongue, and should therefore always be removed in cancer of this organ.

The glands of the posterior triangle form a large group that extends along the posterior border of the sterno-mastoid, and also in a fan-shaped group through the posterior triangle to the clavicle. These lie over the brachial plexus and deep cervical muscles and surround the spinal accessory nerve and branches of the cervical plexus. This group is, as a rule, only involved late in the disease, and its removal is more easily made in block with the other glands if the sterno-mastoid muscle is included.

I have seen recently a recurrence in glands of this group in a patient in whom I had done a radical dissection for cancer of the jaw six months before. The involvement of the glands of the anterior triangle were so slight that I had not thought it necessary to extend the dissection to the posterior group.

Before beginning a radical operation one should decide, as far as possible, which groups to remove. If the cancer is located on the lower lip, the supra-hyoid, the external jugular and the superior anterior carotid of both sides are probably involved. If the latter are palpable, it is probable that some cells have invaded the next group and the lower anterior cervical, and sometimes the glands of the posterior must be included in the block.

In cancer of the tongue, all the accessible glands of the affected side and those of the superior carotid triangle of the sound side should be included.

These operations can frequently be done under local anesthesia, but even if the decision is made to employ a general anesthetic, the operative area should be carefully blocked off with novocain and adrenalin to lessen bleeding and straining during the operation and prevent shock after it. Bleeding is also greatly lessened by having the patient in the sitting position during the operation and by

sequestration of blood in the lower extremities after the method of Dawbarn. It is also essential that too much be not attempted at one sitting, and these operations should be divided into such stages as the location and extent of the growth and the condition of the patient indicate. A record of the patient's blood pressure should be kept during the operation and used as an indication of the extent of removal in each stage. It is better to do these operations in two, three, four or even five stages and have a live and fairly comfortable patient, than do them in one or two and place the patient in very serious danger.

Any form of incision that will permit the separation of such flaps as will expose the deep fascia covering the block to be removed will prove satisfactory. This fascia is then incised along the boundaries of the block, and together with the underlying areolar tissue and fat, dissected off the deep tissues. When any of these tissues, such as the mandible, the sterno-mastoid or other muscle, the jugular vein, or other structure not essential to the continuance of life, are involved, they must be raised with the fascias.

The dissection should be carried from the sides of the block and converge to the area of greatest adherence and involvement.

The upper boundary of every neck dissection runs along the lower border of the mandible and along a line extending from the angle of the jaw to the mastoid process.

In cutting through the fascia, numerous vessels are severed, particularly in the region of the parotid gland. Much time can be saved here if a blunt dissector is gently inserted back of the fascia along this line and used as a guide for clamps between which the section may be made. This method will sacrifice the lower part of the parotid gland, but a tight running suture will prevent bleeding from the numerous severed veins and leakage of saliva. When the posterior triangle is not to be invaded, the posterior incision in the fascia is made along the posterior border of the sterno-mastoid. The fascia is dissected off the muscle, taking with it the external jugular vein, which has already been ligated above, and the external jugular glands. The muscle is now separated from the posterior layer of its sheath; above, the digastric muscle will now come into view. The fat and tissue surrounding the spinal accessory nerve is dissected off. The jugular vein is now exposed and carefully cleared of all tissue; the thyroid and facial branches, which usually enter by a common trunk, are carefully ligated. The common and external carotids are now dissected; the facial artery and sometimes the external carotid should be ligated and severed. The inter-digastric triangle is emptied and the submaxillary gland is pulled down and freed by the division of Wharton's duct, which should be carefully ligated with fine chromic catgut in order to prevent infection traveling from the mouth. The fascias are now dissected off the muscles of the supra-hyoid and sub-hyoid regions and pharynx, and the block is complete.

As much of the space left by the removal of this mass as possible is obliterated by suturing the

various muscles, such as the sterno-mastoid and digastric together.

An attempt is made to fill the rest with an aseptic blood clot. The skin wounds should be carefully sutured and ample drainage should be provided by drainage tubes introduced through stab wounds at proper points. These should not be removed for several days or until all flow of lymph from the cut lymphatics and serum from the contracting blood clots has ceased.

At the first sign of infection the wound should be opened and carefully packed with iodoform gauze.

I have had one case of hemorrhage from the internal jugular as a result of ulceration of the wall of the vein following infection. After gauze tamponing the patient recovered.

The patient should be kept in the sitting posture for several days following the operation.

BASIC PRINCIPLES IN ECZEMA.*

By ERNEST DWIGHT CHIPMAN, M. D.,
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Eczema was defined by Bateman 100 years ago as "a non-contagious eruption, generally the effect of an irritant, whether externally or internally applied, but occasionally produced by a great variety of irritants in persons whose skin is constitutionally very irritable." It has been said that this definition cannot be improved upon today.¹

Since Bateman three important doctrines have claimed supremacy. First, Hebra and the Vienna school contended strongly that eczema is of external origin. Following upon this came the French school with the claim that it is of internal or diathetic origin. Later Unna promulgated the theory that all eczemas can be traced to a microbic origin. Both the Vienna and French schools attracted many followers, but Unna's claims never gained wide acceptance. In recent years the most commonly held views have been that eczema is exactly what Bateman called it a century ago, viz., "the effect of an irritant whether externally or internally applied." There has now appeared a tendency toward the idea of exclusively external causation. To what extent this view is tenable a consideration of some of the basic principles of the affection will possibly help us to decide.

No discussion of eczema can be intelligently pursued until there is a common understanding as to the distinction between eczema and dermatitis.

Morris² says: "Eczema is a catarrhal inflammation of the skin originating without visible external irritation. This definition excludes all forms of inflammation caused by chemical or mechanical irritants. The artificial dermatitis so produced is identical anatomically with the eczematous process and causes indistinguishable lesions, but is not eczema. It is evident therefore that there is something more in eczema than in inflammation of the skin due to a local and transient cause—a quantity beyond this—a pathologic x which may be some invisible source of irritation, some constitutional peculiarity or both of these factors."

This reasoning seems to Pusey³ "a *reductio ad absurdum*, because it amounts to saying that two things which are the same are different because they are produced differently."

In reality the differentiation of eczema and dermatitis is only a convention of nomenclature whereby those catarrhal skin inflammations of known external cause are labeled dermatitis and those of unknown cause are branded eczema. No one can refute, however, the observations of Morris as to the unknown quantity in eczema. But the same observations apply equally in many cases of dermatitis of known external cause. Why, for example, do certain individuals react with acute inflammations to contact with poison oak, poison ivy or certain proprietary hair dyes while others remain unaffected? Assuredly there is some pathologic x, whether we term it susceptibility or immunity or what not. Now if we assume that certain eczemas are of definite and known external origin, and if we admit, as I think we must, that the lesions of dermatitis from poison ivy, for example, are anatomically identical with those of acute eczema, what justification is there for calling them by different names? Absolutely none. The only logical distinction is to limit the term dermatitis to those reactions due to irritants which act upon all alike and which subside spontaneously when the offending material is removed.

Some chemical substances—sulphuric acid, for example—will cause a definite reaction in any skin. Other chemicals—iodoform, for example—will cause a reaction only in certain skins. The essential problem in the etiology of eczema, I take it, is the determination of the reason for this—a reason which is not found in any mere generalities.

Granting that the exciting cause of eczema is sometimes or even always from without, we must search for a predisposing cause either within the body or in the intimate metabolism of the skin itself. The proponents of the theory that eczema is of exclusively external origin say that here is an eczematous reaction, the subject has been irritated with some definite chemical or other noxious substance and hence the reaction comes from without. What they fail to explain is why the particular subject reacts while others who are subjected to the same external influences fail to react.

Certain external agents are well known to be provocative of eczematous reactions, *e. g.*, atmospheric conditions, winds, inclemencies of weather, irritating excretions, chemicals, plants, dyestuffs, parasites, various substances used in the arts, sugar, cement, etc., but, above all, traumatism. Most of these are easily traceable. Occasionally we meet an eczematous reaction of the face and neck, perhaps of even more extensive distribution, due to the use of some proprietary hair dye. Persistent and recurrent patches on the faces of middle aged females should arouse our suspicion of such application. The information is almost never volunteered and quite frequently it is denied.

Aside from purely outward causes the inherent quality of the skin itself must be reckoned with. In both infancy and old age the skin is particularly

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vulnerable and the ichthyotic skin shows a marked susceptibility to eczema. By the term ichthyotic skin, not only marked ichthyosis is meant but the milder forms of so-called xerodermatous skins which share in the eczematous tendency.

A great variety of internal predisposing causes have seemed by many observers to be operative. They may be grouped under such general headings as gastro-intestinal, circulatory, nervous and metabolic disturbances. The well known flushing of the face after a stimulating meal amounts practically to an incipient eczema. Frequently an eczema seems to stand in relation with some visceral disturbance. Darier¹ says in this respect: "Often a rebellious and progressive eczema is seen to precede by several months or years and announce, as it were, the manifestation of a latent visceral cancer." Hyperacidity, indicanuria, thyroid changes, gout, compression at various parts of the anatomy by pressure of tumors from within or constrictions of clothing from without, all are mentioned as contributing factors in the diverse etiology of this affection. A routine examination of the blood and urine of all eczematous subjects will very seldom shed any light on the cause. Probably many of the above cited factors are themselves due to what it seems possible is most often the real or ultimate cause of eczema, namely, some disturbance of the nervous system. Just what the nature of the nerve participation may be it is difficult if not impossible to say. According to Darier, "It is not a matter of central or peripheral lesions which predisposes to eczema, but rather neurasthenia, overwork, emotion, moral shock, sorrow, etc."

Brocq⁵ believes that eczema is developed frequently upon neurotic soil and that the vasomotor element plays in it one of the most important parts.

Our conception of eczema is simplified if we regard it not as a disease, but as a cutaneous reaction, a reaction which results from external or internal irritation in certain subjects. The entire matter will be further simplified if we do not think of eczema as divided into as many forms as there are lesions encountered, each of which has another adjective added by reason of special modifications according to the region involved.

There are three essential or primary lesions to be considered:

1. Erythema.
2. Vesicles.
3. Papulo-vesicles.

These correspond to the three main types of the disease, viz.: erythematous, vesicular and papulo-vesicular eczema. To these must be added another form because its primitive element is slightly variable and because it differs somewhat in configuration from the other forms. This fourth variety is known as nummular or trichophytoid eczema or eczema *en plaque*.

Erythematous, vesicular and papulo-vesicular eczemas are sufficiently explained by their names. It is well known that after erythema there is scale formation proportionate to the intensity of the erythema. Vesiculation may develop into pustules and later crusts; in declining it may present scales.

These are consecutive lesions and give rise to such terms as *eczema squamosum*, *eczema crustosum*, etc.

All of these three primary forms present certain general characteristics. First of all is the tendency toward diversity of appearance. The erythematous eczema to-day is a squamous eczema to-morrow. What was yesterday a vesicular eczema is to-day a pustular eczema and soon again its identity will be lost in a patch of crusts.

There is always to be noted a certain degree of infiltration of the skin together with redness and the subjective sensation of itching. The flexor surfaces of limbs are points of preference. Except in the erythematous form, some degree of moisture is always in evidence at some stage. If to these we add a general tendency toward the formation of fissures and a vague, ill-defined outline, we shall have a fairly comprehensive picture of the eczematous process.

It is necessary to speak in rather more detail of the so-called nummular eczema. Objectively it stands alone among eczemas because of its configuration. Instead of an eczematous patch which fades insensibly away into the surrounding healthy skin, we find here clean cut round or oval patches from one to three inches in diameter, usually about the size of a silver dollar, and beginning as a rule with papulo-vesicles, though sometimes as simple vesicles. Occasionally these lesions clear up somewhat in the center, when they present more than ever the aspect which leads to their description as trichophytoid.

The interesting question arises as to whether there is anything about the form assumed by an eczema which will indicate the etiology in a given case. We hear such terms as gouty eczema, neurotic eczema, metabolic forms, etc. Are there special types of eruption which will permit us to say that a given patch is due to cold, to traumatism, or to gastro-intestinal, metabolic, visceral or nerve disorders? This question must be answered in the negative, because the etiologic elements are both external and internal influences. There may be certain types, however, which indicate an *etiologic dominance*. Papulo-vesicular forms in general seem most often related to internal disorders. This is particularly true of the nummular form in which the papulo-vesicle is usually the essential eruptive element, for in this form perhaps more than in any other no cure can be effected until some internal condition, as for example a chronically inflamed appendix, is removed or some pelvic disturbance relieved.

Various attempts have been made to identify certain types of eczema as neurotic. The point which suggests the participation of the nervous system is the tendency to lichenification, for an eczematous lesion may become lichenified as may any itching spot.

Occasionally an eczema which has primarily been of the characteristic vague outline develops a sharp line of demarcation from the surrounding skin. In such cases the suspicion at once arises of a secondary microbic invasion.

Within recent years what was for a long time known as eczema of the fingers and toes, a reac-

tion presenting a definite border, has been shown to be due to a parasite, the epidermophyton. This condition yields readily to a mild chrysarobin ointment, and of course is now not included among the eczemas.

While the present tendency in this country is perhaps to revert to the old Vienna doctrine of the exclusively external origin of eczema, it is well to consider some of the opinions of present day French writers by whom some relics of the diathetic school are not entirely abandoned.

Concerning the interesting theory of "interferences and intercurrents," Besnier⁶ maintains that quite apart from the improvements and remissions common to the typical process of eczema, unexpected and often rapid arrests may supervene under the influence of diverse pathologic circumstances. In general, any grave intercurrent affection, as pneumonia, typhoid, etc., temporarily inhibits eczematous proliferation, although after the subsidence of this intercurrent affection the eczema blossoms forth anew. Furthermore, according to the same authority, clinical observation definitely shows that there may be established between the eczematous paroxysm and various organic or functional troubles, alterations and substitutions, or that the eczematous flux may be emunctorial. The development of one morbid process, such as eczema, following the suspension of another, typhoid for example, depends upon the presence of an anatomotopographic relation. While of course these alterations and substitutions are by no means always present, there are certain cases in which a balance becomes established which it is impossible to overlook.

Various observations of Brocq⁷ regarding the advisability of treating all eczematous eruptions suggest a similar belief on his part. He says: "If it is a question of an eczema recently developed in a healthy subject, there is no doubt. Treat it as soon as possible. If it is a question of a recent eczema developed in a subject of some other disease, such as recurrent bronchitis, an attack of asthma or gout, such affections as the cutaneous manifestations modify beneficially, it will be temporarily advantageous not to suppress this derivation or, watching the process, to prevent by appropriate local means its great extension. Above all it is necessary to treat the general state, then little by little, with caution, one may first attempt to ameliorate and then cure the dermatosis.

"If it is a question of an eczema existing for a long time in a subject presenting no important visceral complications which alternate with acute attacks of the skin, it is necessary to make it disappear. If, on the contrary, it concerns aged people, rheumatic or gouty subjects, chronic asthmatic or bronchial individuals, those with visceral manifestations, as Bright's disease, etc., one should intervene with the greatest circumspection. In treating the eczema too energetically one may determine the appearance of pulmonary or even more grave cerebral congestions."

All this may seem reactionary and a reversion to the household therapeutics of our grandmothers

who hesitated to heal too rapidly certain eruptions for fear of "driving them in."

Two relatively recent American articles present an opposite view. Hartzell⁸ says: "There is a widely prevalent and deeply rooted notion that excrementitious matters circulating in the blood, especially those which pass out of the body by way of the kidneys, acting as irritants to the skin, are frequent causes of eczema. If this notion were correct, eczema should be a frequent complication of such diseases as chronic interstitial nephritis, in which the output of waste through the kidneys is frequently reduced to its lowest expression and the blood in consequence is charged with an enormous amount of toxic substances which are often excreted vicariously through the skin to a greater or less extent. Under such circumstances the conditions should be especially favorable to the production of cutaneous inflammation; but eczema instead of being a frequent complication of chronic nephritis, is quite infrequently associated with this affection."

Gilchrist,⁹ in an attempt to ascertain the relationship of the various types of skin lesions to the tubular functional activity of the kidneys, injected a series of forty cases with phenolsulphonaphthalein and concluded from the results that the skin cannot act vicariously with the kidneys, either in health or disease.

These two American observations refer only to the relationship between the kidneys and the skin, while the French writers refer to visceral relationships in general.

I can recall one case in my own practice in which the patient, a man about sixty years of age who suffered from a moist eczema about the neck, promptly died from an apoplectic seizure upon the cure of the eczema, although the treatment of the latter comprehended the very procedures which were indicated for a heightened blood pressure.

The relationship between dermatoses in general and the digestion is a matter of such general acceptance that its importance, if not overestimated, is frequently taken for granted even where it obviously plays no part. One does not hear of a balance established between the skin and the intestinal mucosa whereby the healing of an oozing cutaneous surface will be reflected as a diarrhea. Nevertheless we do see every day eczemas which are unfavorably affected by improper feeding.

Let us consider the case of an infant under treatment for extensive weeping eczema. Under a carefully regulated diet and the local application of mild astringents, a steady progress toward improvement is noted. Suddenly a recrudescence takes place with all the original symptoms in aggravated form. In seeking a possible cause we learn that some misguided relative has been regaling the child with pickles and peanuts. Are we not justified in saying the relapse was dietetic? Are we not further justified in assuming that the oozing surface acted in this child as a safety valve and that in some other child the same original impulse might have resulted in reflex convulsions?

To recapitulate briefly the etiology of eczema, the words of Widal may be quoted: "There is

no eczema—there are only the eczematous.” This is in line with the view that eczema is a reaction of the skin largely brought about through external exciting causes in individuals who are particularly susceptible by reason of some internal, predisposing cause. Both external and internal causes cover a wide range, but I believe the most efficient external cause to be traumatism—the multitude of daily contacts—and the most potent internal cause a certain unbalance of the nervous system, whether we call it neurasthenia, vasomotor disturbance, or simple nervousness.

The treatment of eczema might be made the topic for a long discourse, but I shall present only an outline because the details vary with every case.

Treatment is of course both constitutional and local. First of all comes an inquiry into the patient's general health. If there be nothing to direct one's attention to any special organ, which is very often the case, the various etiologic possibilities are to be considered one by one. Among internal causes which have seemed to me operative in several cases were fibroids. In two cases severe papulo-vesicular eczemas were associated with prostatic trouble, one case being a simple hypertrophy, the other showing malignancy. The former was relieved of his eczema by operation, the other died refusing operation. A woman with acute vesicular eczema was relieved by treatment, but it constantly recurred until a system of very tight lacing was reformed when the cure was spontaneous. In a majority of cases some nerve element has been noted, either vasomotor disturbances or a general nerve irritability. Occasionally an eczema will be the apparent cause of a neurasthenic train of symptoms. One patient with an intractable eczema would burst into tears if he saw anyone looking at him in a street-car. His nervous symptoms all vanished with the relief that a soothing application afforded him.

As a rule two paramount indications are to be met, viz.: a rigid non-stimulating diet, and rest. Dietetic measures in the absence of any contra-indication provide exclusion of tea, coffee, alcohol, highly seasoned and nitrogenous foods. A sample diet calculated for the average individual who has usually been eating too much, is an exclusive diet of milk, boiled rice and Vichy water for the first week, with several doses of a saline such as Carlsbad salts. At the end of a week, cooked fruits and soft vegetables may be added. In another week chicken, eggs or fish in moderation. Most patients adapt themselves satisfactorily to this diet and experience a definite sense of general betterment aside from the relief of their eczemas.

The indication for rest is double. If the eczema is at all active and acute, anything which causes a dilatation of the superficial capillaries is detrimental. If there is any degree of nerve exhaustion the more nearly the rest is complete the better the result.

The local treatment of eczema is somewhat epitomized in the phrase—if acute, soothe; if chronic, stimulate.

The important point in local treatment is a perception of the intervening shades of difference

between the actively developing, acute, weeping eczema, and the chronic, indolent, greatly thickened, scaly eczema.

For the frankly acute, moist eczemas I have found nothing comparable to the treatment with wet dressings. We are told that water is poison to eczema. Such is not the fact. The great damage attributed to water is due not to the water *per se*, but to the sudden change from wet to dry and *vice versa*. If wet dressings are elected, they must be kept consistently and continuously wet until the indication is to change. Let us take a typical case of moist infantile eczema involving chiefly the head and face. As the case first comes to us there are usually areas of raw, oozing surface alternating with thick, adherent crusts. A compress of boric acid solution, or one per cent. resorcin solution, even normal salt solution will effect a magic transformation in from twenty-four to forty-eight hours. Two masks are made of several thicknesses of fine linen, one being carefully washed while the other is in use. Renewing the compresses every three hours, a rapid improvement is noted. Within forty-eight hours the crusts have separated, the oozing surface has become dry, shining and ready for a healthy process of epidermization. In fact, if the resorcin solution has been used the process is already well under way. At this stage the compresses may be discontinued and a soothing ointment of boric acid and ichthyol (3 per cent. of each) may be substituted. In other cases less acute and for infants for whom such exacting ministrations are not practicable, frequent applications of a 3 per cent. aqueous solution of ichthyol followed by applications of calamine lotion are excellent.

In subacute cases, either in children or adults, 2 per cent. salicylic acid in Lassar's paste is a classic which deserves its high repute. It should be the remedy of choice when in doubt, for nearly always it is of service and it never does harm. As the case gets further away from the acute and nearer to the chronic type, stimulating applications are in order with keratolytic agents in strength according to the amount of thickening. The type of prescription for such a case is a combination of salicylic acid and a tar preparation, as oil of cade or oil of rusci. If only slightly indolent, salicylic acid 3 per cent. and tar 5 per cent.; if more sluggish, salicylic acid 5 per cent. and tar 10 per cent. may be tried. In the very indolent cases sulphur, green soap, pyrogallol acid, white precipitate are often of service.

In treating any eczematous surface a good rule is first to have a thorough cleaning of the surface to remove all crusts and debris. Preliminary applications of olive oil, or a starch poultice will serve this purpose. Nothing is more futile than to pile ointments upon crusts.

This is a mere outline of treatment. Often a soothing or astringent application effects a cure. Again a remedy designed to allay the itching causes a cure because the patient ceases scratching. But many cases resist. Our endeavor must be to discover the cause or causes. Often both external and internal factors are at work, both of which are hidden and unsuspected. It is the province

of the dermatologist to find these causes, but to do so he often requires much aid of the internist and the laboratorian.

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A CASE OF EXTRAPERITONEAL, INTRALIGAMENTOUS DERMOID CYST AND PREGNANCY.

By HENRY J. KREUTZMANN, M. D., San Francisco Polyclinic.

In the course of time I have operated a few dermoid cysts of the ovary, also some extraperitoneal, intraligamentous cysts not of ovarian origin. Likewise I have done ovariectomy in a number of cases during pregnancy; but I have never seen an extraperitoneal, intraligamentous dermoid, not during nor outside the gravid state, until quite recently.

Mrs. Gr., 28 years old; one child 5 years ago, easy labor; always been in good health; more children were much desired, but did not appear. Menses always regular, without any difficulty.

Last menses September 8, 1913. Towards the end of December, 1913, the lady called on me, not because she had anything to complain about, but because she wished to engage my services for her expected confinement.

When I made the usual examination I had difficulty in locating the uterus well, the gravida would not relax and her abdominal wall was thick and fat. I found the uterus turned to the right side and somewhat backwards; on the left side of the uterus a mass of indefinite character was located. A further examination about a week later failed for the same reasons to clear up conditions sufficiently; therefore examination under an anesthetic was proposed and shortly after done. The uterus was now distinctly mapped out, also the "mass" on the left side was found to reach way down into the cul-de-sac, located close to the uterus, immovable, semisolid, of the size of a small man's fist.

A diagnosis of ovarian cyst and pregnancy of four months was made.

January 14th operation was performed. Median incision through the very fat abdominal wall; the incision exposed not the uterus, but just the left side of it; this organ was placed entirely to the right of the middle and backwards. The left round ligament, much thickened, ran diagonally through the field of operation; along the side of the uterine cervix a few distended veins, one as broad as a finger, were noticed directly under the peritoneum. Nothing of a tumor was to be seen. Digital exploration found left ovary and tube slightly adherent to the side of the uterus; they could easily be detached and brought to view; they were perfectly normal, the ovary was the seat of a fresh corpus luteum.

Palpation revealed the tumor seated in the broad ligament, outside the peritoneal cavity proper.

The peritoneum over the ligament (and tumor) was incised transversely in front of the ligamentum rotundum. With great care and some difficulty the tumor was dug out, mostly bluntly; the inguinal vessels were partly exposed. Great care was employed in the enucleation of the tumor out of its bed, in order not to tear the thin cyst wall. From former experiences I know that it is impossible to remove these thin-walled cysts when

once they are broken; furthermore, we do not know what is in them. Some difficulty was experienced, since owing to the pregnant condition every little vessel bled freely. While working in the cavity with the finger, the incision of the peritoneum tore; the tear extended towards that big before-mentioned vein, injuring it and producing a very lively hemorrhage.

The large cavity in the broad ligament was stitched together and the incision of the peritoneum closed.

The incision through the parietes was closed with particular care, owing to the amount of fat on one side and to the expected strain during pregnancy and delivery on the other side.

Uninterrupted recovery took place; sufficient time (six weeks at time of writing, end of February) has now elapsed to feel assured that no ill effect on the gravid uterus has resulted from the operative interference.

During operation the tumor felt soft, semisolid; when it was taken up for inspection after the operation was finished, it was found to be hard; when cut open the reason for this hardness was revealed. The contents were tallow, that had congealed; besides a large bundle of auburn hair was found in the cyst.

Of interest is the etiology of these rare extraperitoneal dermoid cysts; opinions differ. Some authors claim that they start from accessory ovaries, others derive them from germs disseminated during the descensus of the ovary; the most probable explanation is that they are parasitic formations, so-called "fetal inclusions."

ARTIFICIAL CULTIVATION OF THE GONOCOCCUS.

By ERNST ALBRECHT VICTORS, M. D., San Francisco Polyclinic.

Experience in attempting the cultivation and isolation of the gonococcus for bacterial vaccines and for complement fixation antigen has long convinced me that this is attended with considerably more difficulty and disappointment than is usually conceded. Less difficulty is encountered with subcultures when primary inoculations have been successful, providing that suitable environment and pabulum have been maintained.

Identification demands the fulfilment of the following biologic requirements: (a) Small "dew drop" like colonies—not visible before 48 hours. Older colonies become whitish and tenacious; especially in subcultures. (b) Organisms from direct inoculation colonies must maintain their Gram negative characteristic. Subcultures of certain strains become indefinite in their tinctorial behavior. (c) Subcultures upon ordinary agar must be negative. This is true of most strains even after several laboratory generations. (d) Subcutaneous injections are not toxic for rabbits except in massive doses.

Media. With the view of ascertaining which media were most favorable for artificial growth, a number of infected cases and of different stages were used from which various types of media were inoculated. In this series the media were freshly prepared and inoculations were made directly. Inoculated tubes and Petri dishes were incubated without delay and every effort was made to avoid contamination in taking specimens.

Impressed by the fact that the two mucous membranes most prone to gonococcic invasion—that of the urethra and conjunctive, were frequently bathed by a fluid whose chloride content exceeded that of the blood serum or other secretions, a number of media were prepared wherein this factor was proportionately increased. No definite advantage was observed.

Of the commonly used media, such as human serum and human serum agar, ascites and hydrocele agar, pig and horse serum agar, hardly one in twenty inoculations proved successful. Success, too, seemed dependent upon the quantity of pus conveyed with the inoculation. This pus is the probable pabulum and the colonies rapidly die. On the other hand, these media are suitable for subcultures of most strains provided that the reaction be but weakly alkaline or preferably slightly acid and that transplantation be frequently performed.

Abel's human or rabbit blood smeared agar gives better results provided that the bactericidal power of the serum has been destroyed by inactivation at 56° C.

Thalmann's media was used blood streaked (inactivated) or admixed with human blood serum or hydrocele fluid. In all instances precaution was taken to maintain reaction as plus 0.6 to phenolphthalein. This media gave the greatest number of successful inoculations, but even so, in about 45% of the inoculations the organism did not develop.

The media of Sabraud and Noiré, wherein the protein is casein to which is added pepton, glucose and urea and solidified with agar, although not giving the number of successful inoculations as did Thalmann's, had nevertheless the distinction in some instances of yielding colonies when the latter failed.

UPON THE EARLY DIAGNOSIS OF RENAL TUBERCULOSIS BY THE GENERAL PRACTITIONER.

By MARTIN KROTOSZYNER, M. D., San Francisco Polyclinic.

We are accustomed, of late, to point with justifiable pride to the marvelous progress of the science and art of medicine, by which the diagnosis as well as the treatment of all ailments, which human flesh is heir to, has been revolutionized. At the bedside, as well as in the laboratory, new methods of examination by means of complicated and delicate instruments and apparatus are in daily use at the hands of specialists, experienced in the interpretation of the results of their investigations. Thus at the great medical centers and particularly at the large modern hospitals a correct diagnosis of the more serious pathological conditions is now only considered feasible through so-called team-work, done in several special departments and aided by various laboratory tests. Grati-fying as the results are, under this system, as regards the welfare of our patients, as proven by the marked and steadily growing decrease of the mortality rate, matters are, nevertheless, not quite as favorable for the general practitioner who has been brought up under this system at the teaching hospital of his college and who, when left to his

own resources, has to make his diagnosis and to devise the proper and effective treatment by a less circuitous, complicated and costly route. For the most important aid towards accomplishing this end in view, viz., the art of observation, or the faculty to correctly interpret symptoms and to group them to a diagnosis, has not been sufficiently developed by the above described system. Thus it occurs that patients daily enter our hospitals with long-standing lesions, the earlier recognition of which would have spared them long suffering and a serious operation, often resulting in the loss of an important organ.

No special field of medicine has of late made more rapid strides as regards exactness of diagnosis and efficacy of treatment than urology. It is generally conceded that these excellent results are obtained through the skillful application of instruments of precision, and the opinion prevails among the rank and file of the profession that a urological lesion cannot be diagnosed without instrumentation. The first thought, therefore, when confronted with the solution of a urological problem, is of the cystoscope, which in the hands of the untrained physician is a useless and often dangerous toy. However, the correct recognition of many pathological conditions of the genito-urinary tract can often be accomplished, at the hands of the general practitioner, without special training, through much simpler methods, which at the same time are connected with less discomfort and risk to the patient.

It will be conceded to be an irrefutable fact, however obvious the statement may appear at first glance, that in order to diagnose a certain lesion one has to bear in mind the probability of its existence. Considering in this connection, one of the most frequent and important affections of the genito-urinary tract, viz., tuberculosis, the statement is ventured, that the main reason for the failure of its early recognition by the general practitioner lies in the fact that he is not on the outlook for it. The opinion held in many quarters, that urinary tuberculosis is a rare occurrence, is erroneous, as evidenced by Israel's¹ statement that more than 13 per cent. of all his kidney operations were done for tuberculosis. The same author somewhat caustically observes that, to his notion, the disease is a much more frequent occurrence than its early recognition.

One of the reasons that the disease is overlooked a long time or not recognized in its beginning is, that tuberculosis of an important organ, in the mind of the general practitioner, is always coincident with the dismal picture presented by pulmonary phthisis. The general condition and appearance, though, of patients suffering from advanced renal tuberculosis is quite often excellent. My last patient, operated for this disease, was a stout, fleshy matron of 40, who in spite of her urinary disturbances had steadily gained in weight. Under similar conditions every experienced urologist has removed tubercular kidneys from well-nourished and robust youths of both sexes. The main and most important reason, though, for the failure of an early diagnosis lies in the fact that the general practitioner cannot become divorced from the idea that, since all symptoms of renal

tuberculosis point to the bladder, he is dealing with a chronic and rebellious cystitis. It is marvelous how long such a protracted "catarrh of the bladder" will remain under medical care and treatment with the time-honored antiseptics and local irrigations until, as a rule, the patient is the first to inquire into the reason why the condition is getting worse and why it remains refractory to such continuous and energetic ministrations. Every practitioner ought to know at present that a pollakiuria, which has set in insidiously without a palpable cause, like gonorrhea, traumatism, instrumental infection, etc., which is running along with or without dysuria, which is characterized by cloudy, microscopically purulent urine, and which has become chronic, should be considered highly suspicious of renal tuberculosis. This suspicion should become intensified by observing the inefficacious or rather harmful effect of local treatment and a gradual decrease of the bladder capacity. At this point, repeated careful urinalyses will aid materially in the diagnosis. The urine, which may only be slightly cloudy, will always show besides many leukocytes a few red blood cells. Characteristic are also a slightly red discoloration of the urine (from admixture with blood) or a definite terminal hematuria. In the presence of these symptoms it is the duty of every modern practitioner of medicine to examine a catheterized specimen of the patient's urine for tubercle-bacilli, and if they, after repeated search, should not have been found, to verify or refute the suspected diagnosis by the guinea-pig test. In case this be positive, the modern practitioner, knowing tuberculosis of the urinary tract, almost without exception, to begin in one kidney and the patient's life to depend upon early treatment, will be able to advise his patient as regards ways and means for the exact localization and removal of the diseased focus.

In many instances satisfactory conclusions may be made even as regards localization of the focus. Although it is true that the majority of unilateral kidney lesions present obscure or only vague general symptoms, although, besides that, urinalysis as a rule does not add conclusive evidence pointing to the existence of a kidney affection, the practitioner may, nevertheless, by a painstaking investigation of the history and symptomatology of a given case, be able to gather sufficient material for a focal diagnosis. Aside from distinct attacks of kidney colic or pains located at one of the renal regions, which will obviously point to the seat of the focus, the patient will, upon close questioning, admit of sensations of pain, significant of a renal focus, which, at the time, were not considered of any moment. These sensations may be located at either of the lateral abdominal regions, near the crest of the ileum, the hip, the femur or the os sacrum. Occasionally a sensation of chilliness in one lumbar region is complained of. The judicious interpretation of the evidence obtained in this way will, quite often, permit of fair conclusions as regards the location of the disease, which Israel² was able to determine and to prove to be correct afterwards at the operating table in 70 per cent. of his cases. In this connection, the same excellent observer calls

attention to the frequent occurrence of distinctly unilateral sensations of pain in one-half of the bladder, or urethra, or vagina, or in one labium, which are either connected with or noticeable independent from micturition. Another symptom, not occurring so frequently, but quite characteristic when present, is presented by sudden and intense paroxysms of bladder tenesmus with evacuation of a few drops of a clear, watery urine. These attacks, which as a rule are connected with chills and consequent sweating, point, in Israel's opinion, with absolute certainty to tubercular disease of one kidney.

The evidence obtained through palpation of the suspected kidney, and particularly a palpable enlargement of the kidney, should be accepted with caution, as a mere increase of the organ in size may be due to various other causes (nephrolithiasis, neoplasm, etc.). In some instances, though, the diagnosis is aided by the presence of certain pressure points in the course of the ureter. Painful sensations upon pressure, particularly at three points, viz.: at the juncture of the ureter with the renal pelvis, at its entrance into the bony pelvis, and at its entrance into the bladder, are held by Israel as characteristic of the disease. I have been able to convince myself in two cases of the correctness of Israel's observation, at least as regards the third pressure point, which can easily be reached from the rectum or the vagina, and which, especially in women, is rarely missing.

On the basis of the evidence brought forward above, the conclusion appears to be justified, that every modern physician, without special training and instruments, should be able, at present, to recognize the existence of urinary tuberculosis. I will admit that in some instances the diagnosis can only be made with a certain amount of probability. In the majority of cases, though, the practitioner, provided that he applies careful and painstaking study to the analysis of his case, will be able to gather sufficient data for a focal diagnosis.

The early diagnosis of urinary tuberculosis is most valuable to the patient. It is well known that the tubercular process which has once invaded a kidney will, unless eliminated, rapidly lead to the destruction of the organ, followed by infection of the urinary tract, and will inevitably prove fatal to the patient. Through the early recognition of the disease, the obvious advantages of the early removal of the primary focus and the avoidance of the greatest danger to the patient, viz.: secondary tubercular infection of the other kidney are obtained. The consensus of opinions of leading renal surgeons of the world still inclines towards nephrectomy as the only procedure by which, in by far the greatest majority of cases, disappearance of all secondary symptoms and constitutional improvement, equal to a cure, can be obtained. Gratifying as these results are, the loss of a vital organ is, nevertheless, too costly a price paid for them. In an early diagnosis, therefore, in the recognition of the disease, while still limited to its original focus or in one kidney, lies our only hope for a permanent cure by less radical and mutilating measures.

(1.) Fol: urolog. I, p. 11.

(2.) l. c. p. 13.

IMPORTANT INFORMATION!

Action of the State Society on Industrial Accident Work

In these four pages, so numbered that they may be torn out of the JOURNAL, if so desired, without mutilating the remaining reading pages, will be found presented the plan recommended by the Council of the State Society and adopted by the House of Delegates at the Santa Barbara meeting last month, together with the fee schedule which was also presented as a part of the report and adopted.

The full proceedings, minutes, reports, etc., will appear in the June issue.

REPORT OF THE REFERENCE COMMITTEE ON NEW BUSINESS.

22. We recommend for adoption and ratification by the House of Delegates of the recommendations made by the Council relative to accident insurance, and the relation of our members and Society and county units thereto, as given on pages 6 to 7 inclusive, of attached report (beginning on page 6 with the line "In the following statement," etc., and ending on page 7 with the 21st line reading "subject to discipline," etc.)

"A. Note. In the following statement the Industrial Commission is considered as one of the companies, for it is doing the same sort of work and on the same basis and is agreeable to the general conditions as outlined.

"B. *Contracts*: No contracts at flat, fixed fees for all work are to be made and those now existing are to terminate at the earliest possible date.

"C. *Fee Schedule*: The fee schedule which has been prepared as heretofore indicated and is herewith presented to you, is recommended for the approval of the Medical Society of the State of California and of its various county units, as a schedule of the minimum fees to be charged for the services indicated in the schedule in the treatment of persons who may be injured as specified in the law.

Additional compensation will be allowed in unusual cases for unusual services on proper representation.

"D. *Choice of Physician*: The employer (or the company, if the employer is insured) is to have the right to a free choice of physician and such selections are to be made from lists of names furnished by the insurance companies, these lists of names to be the lists of members of the several county medical societies which collectively compose the Medical Society of the State of California, but no member may be compelled to do the work if he does not wish to. Provided, that in counties where there is no county medical society, or in special cases where the employer may desire to secure the services of some physician who is not a member of his county medical society, he reserves the right to do so; also provided, that in the larger centers the societies are to prepare lists of names of members who are willing to do the work and to arrange so that the services of some of them may be secured at any time, by means of a telephone exchange or some other plan by which their whereabouts may at any time be ascertained; and also provided that the companies are to be permitted to advise their policy holders that certain physicians have, in the past, done work for them satisfactorily. It is understood that an insurance company may have a regularly appointed medical referee in any given locality.

"E. *Adjustment of Fees:* In case a bill rendered by a member is regarded as excessive by the employer (or company) it shall be submitted to the county medical society for scrutiny and adjustment, and if there be still failure to agree, it may be submitted to the Council of the State Society or to the Industrial Commission.

"F. *County Units and Professional Conduct.* In order to carry out the provisions of this plan, it will be necessary for each county unit to approve the schedule—in so far as it applies to the work indicated and to persons whose income does not exceed the maximum indicated in the law. Charges in excess of the proper ones, or bills unduly padded by fictitious or unnecessary visits, shall be deemed unprofessional conduct and subject to discipline by suspension or expulsion."

(Adopted.)

Respectfully submitted,

G. A. HARE, Fresno;

RENE BINE, San Francisco;

GEORGE H. KRESS, Chairman, Los Angeles.

(Adopted as a whole.)

FEE SCHEDULE.

These fees represent a minimum. Fees higher than Schedule will be approved when warranted by extraordinary difficulties encountered by the surgeon.

Unusual cases and procedures not specified are entitled to same fee as specified procedures of approximately equal magnitude.

Note.

Bills must be itemized, showing date of each visit, dressing or operation, and charge for same.

The.....(Name of Company).....is fully aware of the difficulties and inequalities of an inelastic Fee Schedule for surgical service. The Schedule here presented is designed for use in connection with medical services rendered an individual with an average earning capacity of \$1,000 per annum. To this class belongs the bulk of citizens which the Boynton Act is intended to protect and relieve.

First visit including report and first examination, in injury not otherwise specified	\$2.00
Surgical dressings (materials).....Specify Costs	
Mileage beyond city limits.....	50c day, 75c night, 1 way per mile.
Assisting at Operation.....	Major \$10.00 Minor 5.00
Administering general anesthetic....	5.00
Testimony as to fact of injury.....	10.00

Fractures.	Subsequent Visits Hospital or Office.		
	Operation.	Home.	Office.
Reduction and First Dressings:			
Nasal Bones.....	\$10.00	\$1.50	\$1.00
Hand or Foot.....	5.00	1.50	1.00
Forearm—Leg 1 bone....	10.00	1.50	1.00
2 bones...	25.00	1.50	1.00
Femur or Humerus.....	25.00	1.50	1.00
Clavicle or Scapula.....	15.00	1.50	1.00
Patella	15.00	1.50	1.00
Mandible or Maxilla.....	10.00	1.50	1.00
Pelvis	10.00	1.50	1.00
Ribs	5.00	1.50	1.00
(For compound fractures or fractures involving joints)	Add fifty per cent. to operation.		

Dislocations.

Easy reductions without anesthesia or assistants.	5.00	1.50	1.00
Hip	10.00		

Sprains.

Large Joints, First Treatment	5.00	1.50	1.00
Small Joints.....	2.00	1.50	1.00

Amputations.

Finger or Toe.....	5.00	1.50	1.00
Two or more.....	10.00	1.50	1.00
Hand, Wrist, Forearm or Arm	25.00	1.50	1.00
Shoulder disarticulation...	40.00	1.50	1.00
Foot, Ankle or Leg.....	25.00	1.50	1.00
Knee or Thigh.....	40.00	1.50	1.00
Hip disarticulation.....	75.00	1.50	1.00

Special Operations.

Trephining or Resection of Skull.....	50.00	1.50	1.00
Laminectomy	75.00	1.50	1.00
Hernia, Radical operation.	30.00	1.50	1.00
Hernia—by Taxis—Reduction and applying truss.	5.00	1.50	1.00
Paracentesis, Thoracis or Pericardii	5.00	1.50	1.00
Tendoplasty	25.00	1.50	1.00
Catheterization of Urethra	2.50		

Foreign Bodies.

Removal from conjunctiva (one or more).....	2.00		
Removal from Cornea....	3.00		
Enucleation of the Eye...	30.00	1.50	1.00

Minor Operations.

Repair of small wounds (to 2½ inches).....	2.50	1.50	1.00
Repair of large wounds (over 2½ inches).....	5.00	1.50	1.00
Contusions, simple.....	2.00	1.50	1.00
Contusions, extensive (several in different parts of body)	4.00	1.50	1.00
Abrasions—Simple	2.00	1.50	1.00
and Extensive, depending upon severity of case.			
Abscess—incision	2.50	1.50	1.00
Removal of small foreign bodies			

April 22, 1914.

DR. PHILIP MILLS JONES, SEC'Y,
MED. SOCIETY OF THE STATE OF CALIFORNIA,
SAN FRANCISCO, CALIF.

Dear Sir:

On my return from Santa Barbara, I found a letter from the Association of German Physicians, known as the Leipziger Verband.

The industrial insurance law in Germany has been codified and gone into effect on the 1st of January of this year; furthermore, the Imperial government found it necessary to intervene in the continual disturbance between the physicians and the industrial insurance companies, as a result of which an agreement was reached in Berlin on the 23d of December, 1913. This agreement up to date has not been carried out on account of the lack of co-operation of the insurance companies. Evidently they feel very bitter as the result of the antagonism which the medical profession has brought to bear for twenty years. We should consider ourselves very fortunate in bringing about the proper spirit of co-operation from the very beginning.

In reference to the proposition proposed by Dr. Graves, will you kindly call the attention of the Council to the fact that the statistics carried by the various industrial bodies in this country show that 60 per cent. of the accidents are of such a nature as to allow the injured to resume work within fourteen days? As our law does not allow indemnity until the end of two weeks, if the proposal of Dr. Graves was accepted, it would mean that 60 per cent. of the industrial accident work in this state would be uncompensated so far as the physicians are concerned.

Very truly yours,

DR. H. KUGELER.

AUDITORS' REPORT.

Medical Society of the State of California.
San Francisco, California.

Gentlemen:

We have audited the accounts of the Medical Society of the State of California for the year 1913, and we annex hereto Analysis of Cash Receipts and Cash Disbursements for the year, showing totals by months.

The balance with the Union Trust Company of San Francisco at December 31, 1913, amounting to \$290.10, has been verified.

The volume of the bank transactions for the year was as follows:

January 1st, 1913, balance.....\$ 1,558.15
Deposited during 1913, as per statement of cash receipts..... 18,699.62

\$20,257.77

Less checks drawn during 1913 as per statement of cash disbursements 19,697.67

\$ 290.10

The statement of the Union Trust Company of San Francisco shows a balance, as at Decem-

ber 31, 1913, according to their books, of..\$333.10
From this must be deducted check 1327,
unpaid at December 31, 1913..... 40.00

Leaving a balance of.....\$293.10

Of this amount, \$3.00 belongs to Dr. Jones, who made an over-deposit of \$3.00 in August last, and when this amount is withdrawn the balance, according to the bank statement, will agree with the balance shown on the books.

The financial position of the Society, as at December 31, 1913, was as follows:

CASH:		ASSETS.	
Union Trust Company..	\$290.10		
On hand.....	200.00		
			\$490.10
Accounts receivable:			
Journal advertising....	653.63		
Register advertising....	303.00		
			956.63
Stock of paper in printer's hands, as reported by Jas. H. Barry Co.....			494.50
Furniture and fixtures...			750.00
			\$2,691.23

LIABILITIES.

San Francisco County Medical Society, Loan..	1,000.00		
Interest	15.00		
			1,015.00
Attorney's fees; Medical Defense			2,297.80
Pacific Coast Paper Co.:			
Journal paper.....	378.29		
Register paper.....	163.82		
			542.11
J. H. Barry, printing Register			675.00
Rynerson Distributing Co., L. A.....			20.95
T. J. Wash Co., San Francisco			21.72
			4,572.58
Net Deficiency			\$1,881.35

We would point out that the payments for medical defense for 1913 (as per analysis of cash disbursements) amount to \$5,213.10, against \$3,242.87 for 1912, and also liability has already been incurred to the amount of \$2,297.80. This more than accounts for the deficiency shown.

We are, gentlemen,

Yours very truly,

(Signed) McLAREN, GOODE & Co.,
Certified Public Accountants.

RECEIPTS.

Journal advertising	\$ 6,564.30
Journal subscriptions, non-members.....	107.20
County societies.....	9,584.00
Register advertising.....	808.50
Register sales.....	145.00
Rent received.....	180.00
Sundry receipts, including loan.....	1,310.62
	\$18,699.62

DISBURSEMENTS.

Journal expense	\$ 4,881.71
Register expense.....	334.64
General expense.....	1,382.95
Office expense.....	696.52
Salaries	7,295.00
Medical Defense.....	5,213.10
Office furniture and fixtures.....	163.75
	\$19,967.67

Are You Interested?

¶ IF YOU ARE INTERESTED IN THIS INSURANCE MATTER AND HAVE SUGGESTIONS TO MAKE, WRITE TO THE SECRETARY, DR. JONES.

¶ IF YOU ARE INTERESTED IN YOUR JOURNAL, LOOK THROUGH THE ADVERTISING PAGES AND DEAL WITH YOUR ADVERTISERS.

CONCERNING UNUNITED FRACTURES.*

By JAMES T. WATKINS, M. D., San Francisco
Polyclinic.

In this paper I take for my text the following sentence from Joseph Blodgood's review of surgery in *Progressive Medicine*:

"In my mind the most important contribution of Mr. Arbuthnot Lane is the remark that people should demand better results in recent fractures," and this comment by John B. Murphy: "Twenty-five or thirty years ago we practically never had a case of non-union of a fracture. To-day cases of non-union are so common that I do not know what we are going to do."

Rightly to understand the significance of a pathological condition presupposes a knowledge of the normal histology and normal physiology of the affected tissues. For after all, pathology is only physiology which has broken the law.

If we would know the nature and reason for delayed union or for mal-union of bone we must first arrive at some idea as to the way in which repair of bone takes place. Now it happens that this is in nowise histologically to be differentiated from the post-natal processes associated with the growth of bone; consequently it is appropriate at the outset of our study of ununited fractures to consider the subject of normal healing. With this in mind it ought to be no great matter to determine what changes in the general or local condition of our patient might be expected to upset the normal processes and bring to pass what we recognize as delayed union and ultimately pseudarthrosis.

Before we become specific let me say that not only does the bone forming power of individuals vary greatly, but also the bone forming power of the same individual varies not merely from year to year, but one might almost say from month to month.

In a general way it may be said the younger the individual the greater is the proliferating capacity of the bone cell and consequently the more remarkable is the bone producing power.

For example, I was lately called upon to set the fractured arm of a baby three days old. Union was firm without either shortening or deformity at the expiration of three weeks—and I don't know how much sooner, for I didn't look—with, however, immense callus production. Again, just three weeks after, I was asked to set the fractured thigh of a baby one day old. Here, too, at the end of barely three weeks the result was all that could be desired.

If all experimental investigators were in agreement as to the part played by each of its several components in the growth and repair of bone it ought to be a comparatively simple matter to set down what these several factors were, and then to determine which mechanical element of treatment might be misapplied with the result of suppressing one or other of these reparative features, and thus bringing about delayed or mal-union. Unfortun-

nately this cannot be done. For in the most essential features of osteo-genesis the conclusions arrived at are almost as various as the investigators themselves. I shall attempt, however, to set down first the features upon which all of them appear to be agreed and then to direct attention to the most significant matters of disagreement.

(1) In repair of injuries to the shafts of long bones there is a transition stage of cartilage.

An exception to this rule has been noted clinically by Mr. Lane and verified experimentally by Sir William Macewan: namely, when fresh fractures are at once and accurately coapted they heal by a sort of primary union. Of course, this constitutes a strong argument for the immediate operative treatment of fractures.

(2) Next, the bodies of the cartilage cells become absorbed, while their nuclei divide to become osteoblasts. These osteoblasts are capable of rapid proliferation. Their peculiar function is to produce a matrix which becomes calcified.

(3) It is generally agreed that freedom from undue pressure is essential to active osteoblastic proliferation. Bearing this fact in mind it becomes at once apparent that too tight splinting must prove a potent factor in bringing about delayed union, if not in actually preventing union. I shall dilate upon this circumstance later.

(4) Growth of bone occurs in the direction of the least resistance.

(5) The Periosteum. Here the experimental studies of independent investigators have led to the most diverse conclusions.

I was entirely satisfied with Macewan's deductions made from experiments covering a space of thirty years, and which seemed to show quite conclusively that the periosteum possessed no inherent osteogenetic property, but that it was essentially a limiting membrane, confining the osteoblasts within certain limits and in general determining the shape of the bone. And then I became interested in a brilliant paper which appeared in *Surgery, Gynaecology and Obstetrics* for August of this year, on the "Regeneration of Bone from Periosteum," by Dr. S. L. Haas, of San Francisco, published from the Pathological Laboratory of Stanford University Medical Department.

Dr. Haas made 62 experiments in ten groups, the elapsed time varying from 4 to 249 days, the whole period extending over an interval of two years. The paper must be read to be appreciated.

Dr. Haas' conclusions were: 1. That periosteum, especially in the presence of blood clot, has the power to regenerate bone. 2. That regeneration of bone is not dependent upon the presence of pre-existing bone. 3. That regeneration of bone was never found excepting when periosteum was present.

Of special interest to this discussion were experiments 4 and 5. In each case the experiment was repeated four times.

In the fourth group the rib was shelled out of the periosteum, except at the ends, and a flap of muscle interposed to keep rib and periosteum apart.

Observation. It was noted that regeneration of

* Read before the San Francisco County Medical Society, September 16, 1913.

bone occurred from the line of contact between bone and periosteum.

In the fifth group, bone and periosteum were again separated and a muscle flap again interposed. This time, however, the periosteal trough was filled with blood drawn from the superficial subcutaneous veins.

Observation. Within sixteen days every periosteal gutter was filled with new bone.

Deduction. There is a marked increase in bone production within the periosteum in the presence of blood clot.

Your attention will be recalled to this observation when we consider treatment.

In children the periosteum can be easily shelled off in a relatively thick layer. It is firmly adherent only at the extremities of the bones opposite the epiphyseal lines. Between it and the bone is the osteogenetic layer (Haas) and loose areola tissue richly provided with thin walled blood vessels. In the adult the same histological relations obtain, though in less generous proportions, but it is then very tightly stretched over the surface of the bone and adherent to it.

Recognizing nevertheless that the function of the periosteum is, at least in part, that of a limiting membrane, many of us will recall instances in which a piece of stripped up periosteum was found at operation interposed between the fragments of a fracture and constituting a very real cause of mal-union.

The nourishment of the long bones, especially in the adult, is derived mainly from the nutrient artery. However, the blood vessels in the subperiosteal areolar tissue do communicate directly with the terminals of the Haversian canals and unquestionably play a part in the nourishment of the bone.

I shall not discuss the epiphyses, as we are not considering epiphyseal disjunctions at this time.

So much for what we believe we know of the growth of bone.

Authorities are agreed that there is an attainable condition of primary union. They are also agreed that bone grows in the direction of the least resistance and that its growth is retarded by undue pressure. Undue pressure could then be a potent cause of delayed or mal-union. Interference with the blood supply through injury to the nutrient artery or stripping up of the periosteum, or both, could easily be another cause of delayed or mal-union. And indeed such is believed to be the case. Separation of the fractured ends and the interposition of periosteum or of muscle or of other soft parts is accepted as a potent cause of mal-union. So also is loss of alignment with slipping past one another of the fractured ends. Suppuration with formation of scar tissue is yet another cause. Disturbances of nerve supply have also been suggested. Here should be mentioned Crile's demonstrations of his theory of the effect of fright as a cause of mal-union in fractures. I have had no experience of fractures of this class. But Bloodgood reports himself as im-

mensely impressed with Crile's demonstrations when he visited Crile's clinic.

For the sake of completeness mention should be made of the other constitutional causes of mal-union. I refer to the infectious diseases, prolonged illness, and central nerve lesions. Also syphilis osteomatocia and thyroid insufficiency. The treatment appropriate to these conditions is medical, and will not be considered here.

Inefficient splinting as it applies to alignment is a cause I overlooked, and another and very frequent cause of mal-union is surgical impatience. At the expiration of the interval given in the text books for healing, the surgeon finds motion still present. Instead of letting the part remain protected for another fortnight, frequent examinations are instituted and a definite false point of motion developed.

Yet another cause of mal-union is carrying the body weight too early by recovering bone. We see this most often after Pott's fracture.

Before proceeding to a discussion of the treatment of delayed and mal-union I wish to return for a moment to the question of undue pressure. And allow me again to repeat the sentence from Murphy with which I opened this paper. "Twenty-five or thirty years ago we practically never had a case of non-union of a fracture. To-day cases are so common that I do not know what we are going to do." He continues: "The bones are usually put in apposition, but we fail in the fact that while we get a fairly good apposition, we produce a too perfect immobilization for the best osteogenesis. Absolute immobilization is not conducive to the greatest reproduction of bone or of callus." Murphy adds: "If you are going to immobilize with casts and fixation apparatus, then the patient should be put in ambulation—start him walking, keep up a constant irritation of the ends of the fragments. That will stimulate union. It favors osteogenesis." This last was the method actually in use when I was a student in Europe some years ago.

Thus, we have voiced authoritatively what I and others of you have for some time felt to be true: namely, that the practically universal employment of plaster "casts" in the treatment of fractures of the tubular bones was mainly responsible for the unsatisfactory results, and especially for the cases of delayed union so frequently reported. For apart from the use of the X-ray and from the open operation, the employment of plaster of Paris is the only significant modification of treatment introduced since the Civil War. Mr. Lane, the leader of one school, does not use plaster of paris in his fracture work.

Says the Johns Hopkins surgeon, Joseph Bloodgood: "I must confess that personally I dislike plaster of paris in the treatment of fractures." Mr. Robert Jones, in my judgment the greatest conservative bone-setter living, would not dream of using it whenever he could get anything else. You will recall how small a part it plays in Cotton's book in the treatment of almost all but intra-

capsular hip fractures. And I might continue on indefinitely.

Now, the trouble with plaster of paris is that it does its duty too well. Not only does it immobilize the ends of the fracture so completely as to prevent their stimulating each other to increased osteogenetic activity, but by compression during the stage of reaction it prevents, or at least limits, the extension of osteoblasts. Still further, it prevents or minimizes at this time the formation of blood clot and passive congestion. The former of these we saw in Haas' fifth experiment to be one of the most potent stimuli to bone production. The latter, I shall show you in a minute, has been used as one of the means by which we can overcome non-union when present.

Now, plaster of paris has great virtues. It does actually immobilize, and from that fact alone is a most potent factor in the relief of pain following an injury. It makes easy the ambulant care of a fracture and assures both patient and surgeon against the chance of an intercurrent injury. But most virtues become vices when carried to excess, and so plaster of paris which immobilized better than anything else, actually overdoes it. Their most irreconcilable opponents will admit that the clinical studies of Lucas Championniere and of Bardenhauer have demonstrated that immobilization in the sense that plaster of paris immobilizes, is in nowise necessary to the repair of bone. Indeed if each of you will go back over his memory of his own practice, he will recall cases which came from the cast, even after a protracted treatment, with motion at the site of fracture, which motion disappeared under the guarded reconstitution of function.

William Hessert, of Chicago, says: "Fractures that are plated may suffer delayed union, while fractures that are operated without the use of foreign material heal as rapidly as closed fractures."

Hessert attributes the delayed union to the presence of a foreign body in the wound. Some of you will agree with him, but I am not at all sure that he is right. It is always possible that the delayed union results, in part at least, from the too great fixation afforded by the internal splint. The longer the splint the more complete the splinting. I will close this portion of my paper with another quotation from Bloodgood: "Everyone now agrees that massage and passive motion and other means which improve the circulation of the limb and maintain muscle tone are part at least of any method of treatment."

Some of my hearers will take exception to that statement, until we know that they on the one hand, and Bloodgood and Championniere on the other, mean the same thing by "passive motion," the rest of us must withhold our verdict.

A friend of mine called me not long ago to see a fractured femur which I had plated for him three months before. He said he had been using passive motion, but that the patient had resisted him so much he feared something had happened to the fracture. It had. He had broken it over again.

THE TREATMENT OF DELAYED UNION AND OF MAL-UNION.

I begin this portion of my paper with a quotation from Bloodgood:

"It is not surgery for the inexperienced. Operations for appendicitis, gallstones and intestinal suture are, as a rule, much less difficult than many of the operations for fracture. I would advise the surgeon to arm himself with Lane's instruments, and if possible to witness his technic."

Edward Martin of Philadelphia, in a paper before the American Surgical Association emphasizes the importance of having the proper implements. He too, follows pretty closely Lane's technic.

Lund agrees with Martin in regard to the importance of proper instruments and apparatus. And I might quote yet other authorities. Instead of doing so, however, I will hand around Mr. Lane's instruments procured for me by Dr. McChesney when he was visiting Mr. Lane last year.

I have read you what eminent surgeons, many of international repute, had said of the Lane instruments to afford a contrast to comments by local lights. The first surgeon to whom I showed them—a most luminous body—said he wouldn't give me \$5 for the lot. Another, himself a foreigner born, found them "clumsy and German looking," and said he much preferred a tire iron to Mr. Lane's bone levers.

The treatment of delayed union will have suggested itself in the course of this paper. If there be angulation and over riding it must be corrected. Mr. Jones suggests that this be done by means of strong pulleys. He reports among others, a fracture of the middle one-third of the femur with three inches shortening occurring in a man of 30. Four months after the accident Mr. Jones was able, with pulleys, to pull this limb out to its full length and maintain it there by means of constant traction as applied by a Thomas knee splint.

Says Mr. Jones: "Non-union would rarely occur if delayed union obtained proper attention." To stimulate an effort to unite, in early non-union the fragments being end to end and the alignment correct, Mr. Jones with a heavy, well covered hammer, beats the factured ends. He then ties an india rubber tube two or three inches above and also below the fracture. He says, "I have seen scores of ununited fractures unite after this simple procedure." He calls it damming and percussing the fracture.

Even when open operation has been decided upon, Mr. Jones advocates a preliminary vigorous application of the pulley followed by a week of constant extension. In this way he hopes to obtain the final result at operation with a minimal loss of bone.

It has been suggested to stimulate the flagging osteogenetic function by the injection into the region of the fracture of alcohol, iodine, formalin (Meisenbach) and fresh autogenous blood (Bier). In the light of Dr. Haas' experiment No. 5 this suggestion of Bier's would seem to be a good one. Finally Dumreicher has advocated the employment of hyperemia. This would appear to be in every

essential identical with Mr. Jones's damming, just described.

Of course, such a person should be got out of doors and every effort made to raise his resistance. We assume that a careful physical examination had revealed none of the constitutional causes of non-union.

We have arrived now at the moment when our delayed union is manifestly a mal-union, indeed a non-union in the usual sense, and, other methods having failed, where operative interference is indicated.

When we turn to the operative side of the treatment of non-united fractures everybody who is somebody seems to be in entire agreement with everybody else who is somebody as to both what should not be done as well as to what should. Dr. Murphy backs up Mr. Lane in saying that the latter's plate should not be used, whereas everyone thinks the autogenous bone graft is indicated.

The only points upon which individual emphasis are laid are points of technic. Theoretically to be sure the views of the different observers as to what happens to the bone transplant are interesting, mainly because of their diversity. One observer believed that the transplant lived, another that it died, and a third that part of it lived and part of it died. What they all agreed upon, however, was that it did the work.

Codivilla tried to keep his transplant alive by leaving attached to it a generous pedicle of muscle tissue. This technic applied particularly to pseudorthroses of the tibia. In addition to the graft which he took from the fibula and inlaid into the sides of the fragments next it, maintaining it in place by wiring, he plastered over the whole region of the pseudorthrosis with periosteal grafts to which were attached thin plates of bone. He admitted, however, that the free transplant had a much wider application.

To judge from his writings, or rather from his dictatings, Murphy would appear to have had the largest experience with the free osseous transplant. I notice that his technic appears to change from time to time. Still the principles upon which it is based remain unchanged. The false ligaments are cut away, the ends of the bones disengaged and freshened. They are then bored longitudinally for a couple of inches and reamed out with a specially devised instrument. Lately he has been grooving them to render easier the stepping of the transplant into place. The transplant is taken from the crest of the tibia. It is 3 or 4 inches long and on cross section about three-eighths of an inch on a side, being roughly quadilateral. The periosteum is left

intact. Murphy uses the Zapffe motor saw. It is expensive. A thin bladed chisel will do sufficiently well. This very sizable graft is driven up into the enlarged medullary cavity of one fragment far enough to permit its other end to be stepped through the groove of which I spoke into the mouth of the opposite enlarged medullary canal. Using a chisel the graft is now driven for some distance down into the second canal.

A detail of technic to be remembered is that the graft must be contacted with the fragments at either end. Occasionally Murphy compels this contact by driving a nail through one side of each fragmental shaft and against the graft, thereby forcing it up against the opposite wall of the reamed out medulla.

Murphy does not believe that the graft lives but that it offers a bridge through which the vessel in the Haversian canals are able to pass from one fragment to the other.

To this end six to eight weeks absolute fixation in plaster of paris are indicated. Patients are then got up on crutches. They wear a leather sheath splint for six months more.

Where pseudorthroses are near joints, Murphy resects till he gets out of the sclerotic area, and then makes two grooves at right angles to each other in each fragment. Into these he introduces plates of phosphor bronze. He then immobilizes in the usual way.

Permit me two more quotations in conclusion. Murphy says, "Remember that the essential point in all this work is to avoid hand contact with the wound, and not to drag anything over the skin into the wound, even though the skin has been disinfected thoroughly with iodine."

And finally this from Bloodgood in *Progressive Medicine*: "Surgeons with no orthopedic training often fail to get perfect results when their operative part is above criticism. This failure is due to the neglect of orthopedic apparatus in the after treatment."

Discussion.

Dr. Harry M. Sherman: I am quite sorry that Dr. Rixford is not here because he has had a wide experience with fractures and he looks at things very frequently from an individual viewpoint, so that his opinion always has a unique interest. Dr. Watkins has prefaced his very well written paper with some exceedingly well chosen quotations, but I am going to take exception to one of them. He quoted—"that pathology is histology which is disobeying a law." I should say that pathology is histology which is obeying a wrong law, a law which has taken the place of the original law. Everything obeys a law, and when non-union occurs it is just as much in response to law as is

union. The sooner we get rid of the idea that pathologic tissue is disobedient tissue, and recognize that it is tissue obeying a law which is dominant for the time and has superseded the law of the normal, we will have a viewpoint from which we can watch conditions with a much better understanding. The different opinions reached by competent men on the subject of the healing of bone and of osteogenesis make it very evident that the question is not yet settled, and that we do not yet know exactly what part each tissue plays in the production of new bone. From what has been said this evening, it seems not unlikely that the dictum in Erichsen—that we get most callus in those cases where most injury is done to the soft tissues—is not far from the truth.

Now, regarding the places where non-union occurs most frequently, and the conditions under which it occurs. I think that the most common cause of non-union is probably syphilis: the general condition affecting all the tissues and particularly affecting the bones; its close companion, tuberculosis, as a good second; and then the other chronic infections and acute infections, where the general condition of health is much impaired and all processes of nutrition are interfered with, will have to be added. These would be three general conditions that would be most likely to produce non-union in fracture.

The effect of nerves upon non-union I think should be disregarded. I do not think there is such a thing as non-union due to the influence or lack of influence of the trophic nerve. Jacques Loeb assured me that there was no such thing as a trophic nerve. In these cases where non-union has been credited to a trophic nerve influence or lack of influence, we are very likely dealing with a luetic case—as in a tabetic patient—and it was really lues and not the nerve condition that was responsible. The non-union which occurs in certain bones, notably the humerus and tibia, I think occurs, so far as local condition is concerned, at the place where the nutrient artery is torn by the infraction. These arteries enter these bones about their middle and go down, the one toward the elbow and the other toward the ankle. The fractures which fail to unite are those which occur below the entrance of the nutrient artery. In those cases the radiogram will usually show the lower fragment atrophied and when you expose the ends of the bones, you will see efforts at throwing out callus from the upper fragment which have been successful; efforts from the lower fragment have produced little or no callus. This is to me the simplest explanation of the occurrence of non-union in one of these bones.

As regards the age at which non-union may occur, the fact that it has occurred in children is curious because, as Dr. Watkins said and most of us agree, all reparative processes in children go on with great rapidity. But children are frequently subjects of an unsuspected hereditary taint, and I am quite certain that some of my cases had lues without my being aware of it. I remember a child who had been brought to the hospital for an apparently intrauterine fracture which had healed in an angular position. I did a cuneiform osteotomy. Non-union occurred and persisted. I transplanted bone from a dog according to the method of Phelps, which he had told me had been successful in a similar case of his own. I did all the things I then knew of in an effort to get the bone to unite. He was taken away from the Children's Hospital, and years after I saw the boy at the City and County minus that leg.

I once saw a child with non-union of the clavicle—a little girl. There is no bone which unites more readily in most cases, but this persisted in refusing to unite even after it had been wired. I discovered afterward that the child's mother was a prostitute and the evidence was that the child was luetic. Both of these instances occurred before we knew anything about the Wassermann reaction.

I have under my care now a girl who had non-union of the lower end of the radius and ulna following a simple fracture. She was the child of very decent people, a perfectly healthy little girl apparently, but I could not make the bones unite even though they had been very carefully plated. Finally I had a gleam of intelligence and had a Wassermann reaction done, and it was positive. The child was put under treatment, went East on a visit, and I have not seen her for some time. I hope to have an opportunity to operate again after the luetic condition has been overcome.

You must remember that Edmund Owens offered quite a large sum of money for anyone who could produce a child who had had non-union and in whom union had afterward occurred. If I succeed with this child I shall write to Mr. Owens and tell him that I shall be glad to get a check from him!

Regarding plaster of paris. I think we use it, or do not use it, very much as we have been taught, just as all Republican boys usually as men vote the Republican ticket. I think it can be put on badly and put on well. I do not agree that it holds the fragments so firmly that the effect of motion is entirely withdrawn. No matter what kind of a bandage you put around a limb, and no matter how tight you put it on to-day, it is loose to-morrow. The atrophy of tissues which occurs under the plaster of paris splint is the same as that which occurs under the wooden splint and bandage. I think that for some surgeons who have not been brought up in a hospital, the ready made, bought-in-the-shop splint is better than plaster of paris, for the limb can be put in contact with the splint and receive support from it immediately, whereas in plaster of paris the limb has to be held during the application of the bandage and there is much opportunity for displacement of fragments during this manipulation and during the period while the plaster of paris is setting. I am in the habit of putting against the limb a light Yucca splint, cut of the proper shape and size to fit the part and steady the fragments during the application of the plaster of paris; and I make it a point always to hold the limb myself while my assistant or associate is the one who puts on the plaster of paris bandage. And yet in just such a case in my own office this afternoon I saw a radiogram taken of a fracture of the ulna, in which there had been a little departure from the best possible position, and it would show that either there had been a slip during the application of the plaster of paris, or that even the plaster of paris splint had not been able to hold the bone absolutely immobile. I think that you may often find it profitable to tighten up a plaster of paris splint after it has been on a few days by cutting out a strip from one end of the splint to the other, closing up that gap, and putting on another plaster of paris bandage. I am certain that if I had a fracture of bone myself, I should feel much more comfortable in a good plaster of paris splint than in a wooden one.

As regards delayed union in cases where plating has been practiced—where we have put on internal fixation apparatus like the bone plate. I have only seen that occur in the tibia, and I do not know why it occurs. Roberts of Philadelphia has written on the subject lately and his explanation is not clear at all. It is simply an acknowledgment of the fact that in certain cases it does occur.

(To be concluded, June, 1914.)

MYXO-LIPOMA OF THE KNEE JOINT.

By GILBERT M. BARRETT, M. D., San Francisco
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Myxo-lipoma is, of itself, not uncommon. In fact a myxomatous degeneration of lipomatous tissue is frequently seen. Hertzler in his recent "Treatise on Tumors" says:¹ "They (myxomas) are usually associated with fibrous tissue, and less often with fatty tissue. With these tissues they form combinations in varying proportions, but usually the myxoid tissue predominates."

A lipoma arborescens of the knee presenting such myxomatous tissue has not been mentioned in any of the case histories it has been my fortune, in an extended investigation, to see.

This may be for the sufficient reason that such tissue merits no mention, but this seems hardly to meet the requirements in explaining this total absence of even an intimation that such tissue had been seen at least once. The only exception to this lack was in Hoffa's description of the formation of the villi in a lipoma arborescens. James K. Young² in 1908 brought before the Philadelphia Surgical Society a young man from whose knee he had removed a fibro-lipoma. In this report he stated that there was degeneration of the sub-patellar bursa and synovial fringes. This was the only one noted where the tissue was of either of these mixed types. Clinically it presents nothing noteworthy as a myxo-lipoma. Pathologically it presents one of two things, either, as Hoffa³ puts it—"after a trauma resulting in a diffuse lymphocytosis into the joint, most marked about the blood vessels; later there may be a mucoid and hyaline degeneration, then villi formation, up to a point of lipoma arborescens."

In the material from the case to be reported we might have had some of the fatty tabs presenting mucoid degeneration only, while the rest of them had reached the point of villi formation "up to lipoma arborescens"; or the lipomatous tissue is a normal development from fetal myxomatous tissue, and in this specimen some of the myxoid tissue still persisted.

Histologically there is a close relationship between the myxomatous and lipomatous tissues. But whether here the origin of, a link in the chain of an inflammatory process, or a degenerative process, this specimen seemed to point to the last, the result of trauma. The type of tissue was noted on routine examination of the specimen of lipoma arborescens removed by the writer from a "chronic knee." Since the myxomatous element need not be dealt with separately or particularly, we shall discuss some of the points of interest in lipoma arborescens, a part of one case of which, it happened to be.

Definition: To Johannes Muller we are indebted for the name. Lipoma arborescens is a disease of the joints, maybe of the tendon sheaths usually of the shoulder or knee; chronic in type; manifesting itself in a hyperplasia of the normally present ligamentum mucosum, including the ligamenta alaria (in the knee), or in a fatty degeneration of the villi normally found in the joint, or both; or it may be a subsynovial lipoma

arising from the fatty layer beneath the synovial membrane of the joint.

Anatomy: A complete anatomical description of the knee is not in place here, but it will be well to consider some of the features of this modified hinge joint, as it is the common site for these growths. Let us direct attention to the so-called ligaments, the ligamentum mucosum and the two similar folds of synovial membrane extending from either end of the mucous ligament outward and upward alongside the patella, called the ligamenta alaria, and the presence of a larger or smaller amount of fat under the synovia about the joint. The ligamentum mucosum is not a true ligament, but a synovial fold triangular in shape, with its apex attached in the supracondylar notch, while its base, about one and one-quarter inches in width, is about opposite the middle of the ligamentum patellae. It is thinner at the apex, varying from a cord-like thinness to a thickness of about one-fourth inch at its base, with sometimes considerable fat. The ligamenta alaria also may vary from the thinness of synovial membrane to a decided thickness due to the presence of fat. The relation of these ligaments to the margin of the anterior articular surfaces of both condyles and the patella exposes them to injury in any accident affecting the anterior part of the joint. In some knees also there exist transverse fringes along the line of the joint, corresponding in structure to the other synovial folds, and also occasionally having fat in them.

Etiology: Formerly the occurrence of these fatty growths was attributed to tubercular infection, or arthritis deformans, though Volkmann, who made the first suggestion as to the etiology, as early as 1885, classed lipoma arborescens as a condition not of necessity primarily tuberculous, but developing into it. In the years since these first descriptions it has become evident that the etiology is not so limited as at first was supposed. Many conditions may cause a hypertrophy of the synovial fringes, or render possible the formation of true lipomata from the pushing into the joint of the subsynovial fat, through a slit in the membrane.

König⁴ described several stages of the tuberculous process occurring in the knee joint, in the later stages resulting in fibrous masses, these leading to the formation of villous-like structures and free bodies. Levison's⁵ article, published in 1904, described a case of tuberculous lipoma arborescens and called attention to the careful work of Schmolck who in his first case reported villi presenting macroscopically and microscopically a tubercular process.

Bloodgood⁶ stated it thus: "Tuberculous synovitis though rare, may be associated with hypertrophy of the villi of the synovial membrane. The tubercular infection may be primary or secondary."

Painter⁷ in an extensive review of the literature and a careful study of his own material, did not assign to tuberculosis so prominent a place in the etiology as others, particularly Steida, whose conclusions he quoted in full. Two years later Flint⁸ published the histories of four cases, all resulting from trauma; the second only manifesting tuber-

culous involvement, and in this one the author was in doubt as to whether a pre-existing tuberculosis of the joint was injured, or whether an injured synovial fringe had become tuberculous. Goldthwaite⁹ in his "Orthopedic Surgery" accords to trauma first place. König's lipoma solitarium, considered by some a true lipoma, results from trauma. Rammstedt¹⁰ states that the condition must be looked upon as a traumatic arthritis. "Following severe, slight, or repeated trauma, or even over-exertion, certain traumatic lesions may develop, . . . the most frequent result is villous arthritis in its various forms. There may be a single lipoma, a few villi, or the entire joint may be covered with these fringes."

Hoffa¹¹ has shown the etiology to be (1) trauma, from without, single, slight or severe, and repeated slight trauma; or (2) from within, as free bodies, dislocated menisci, loose joints, arthritis deformans. To which list Bloodgood¹² adds tabes dorsalis with its arthritis.

McIlhenny¹³ in 1911 claims that Schuchardt disproved the tubercular theory and relationship. He himself thinks trauma, injuring the ligamentum mucosum, or a chronic inflammatory process causing its hypertrophy till it is pinched between the bones of the knee, the chief factors. From what can be gleaned from the literature and a study of the cases presented, trauma appears to be the principal cause of lipoma arborescens, as well as of the true lipoma and the rare osteo-periosteal lipoma.

Gross Pathology. Generally there is a thickening of the joint capsule; with the synovial membrane as well as the capsule overspread by masses of fusiform or round, fatty villi, projecting into the joint cavity. Hoffa, Steida, Painter, König, Bloodgood, Rammstedt and others found that these may occur singly, or may be multiple, but joined together in masses or clumps, so that the entire joint may be invested. Depending upon the type, the membrane may be denser and thickened, thinned out and fatty, or the membrane may be normal, the only changes noted being hypertrophy of the adipose and connective tissue elements, resulting in a growth within the articulation, usually more fatty than fibrous. If as in cases reported by Painter,⁷ later by Meisenbach,¹⁴ and still later by Rammstedt,¹⁰ the growths may be single, or multiple masses, they may simulate true lipomata. If as in the lipoma solitarium of König, the fat pad located between the upper boundary of the patella and the upper confines of the quadriceps pouch, is hypertrophied. If as in the more frequent villous arthritis, the villi normally found within the joint, along the ligamentum mucosum and the plicae alariae, are hypertrophied through precedent traumatic or inflammatory conditions, and may completely fill the joint cavity as villous fringes, varying in size, shape, color and consistency. There may be adhesions between any of these and the parts making up the joint, and these are often broken up, only to reform in the same or other location. If attached to the upper border of the articular surface of the femur, the capsule may be so held that motion is limited,

and pain may be caused by efforts to effect movement. If the ligamentum mucosum is abnormal, usually from trauma, the peduncular fat-pad normally present and acting as a cushion between the femur, patella and tibia, may become enlarged and unelastic, and mechanical obstruction to motion is the result, with pain ensuing when almost any motion is made. That complicating conditions may be present none can deny; osteo-arthritis, exostoses, dislocated menisci, rupture of the crucial ligaments, the arthritides of tabes and tuberculosis.

Microscopic Pathology. The lipomata are found to consist of bands of fibrous tissue, some narrow, irregular and loosely woven together, others regular and broader and more compactly placed. Throughout this fibrous tissue blood vessels are usually found, sometimes numerous and sometimes infrequent, sometimes thin-walled and at other times the walls are thick. Between and around these fibrous areas are found adipose tissue, generally with few and thin-walled vessels, their lumina sometimes obliterated. The synovial tissues are generally infiltrated by masses of fatty globules; in some cases the normal capsule has undergone a fatty degeneration, and in parts, the synovial membrane covering the lipomatous villi shows a decided scarcity of blood vessels, the adventitia of which also shows fatty changes.

Clinical History. Gradual onset in nearly all cases. In most instances a history of trauma, extra- or intra-articular, recent or remote, may be elicited. This may be severe and single; or slight and frequently repeated, or so slight as to almost escape notice. It may be that over-exertion is the chief point in the history. Following this at varying intervals the patient will notice a lassitude, a disinclination to work or walk, fatigue, disability, and sometimes pain, usually increased on motion. Sometimes the patient complains of a fullness in the knee, sometimes of the knee "catching" or "locking," states that going up or down stairs or a hill is productive of more discomfort. Rammstedt¹⁰ in his monograph in 1909, in which he brings the bibliography to date, gives it as his experience that patients complain of pain, which is always increased by exertion, and there may be sudden attacks of great severity. "In raising the leg of a patient who is lying down and sharply flexing the leg on the thigh, one can tell by the presence or absence of pain whether there is villous formation or not."

Tenderness on pressure is rarely found as a constant symptom, but in the patients with considerable effusion it may be marked, or when some intra-articular trauma has been recent. Swelling may be present and annoy the patient by limiting his motion somewhat, or there may be just a sense of tenseness due to the fluid in the joint, or to the masses of villi which encroach upon the articular space.

Effusion varies in the different types, being almost wholly absent in the fatty form due to general obesity. "Fluid is not present in excess," according to Goldthwaite, "except as it may happen that the examination be made shortly after an occasion

when the fringe has been pinched and a traumatic synovitis induced."

"Locking" or "catching" is mentioned by Hoffa, Rammstedt, Painter, Goldthwaite, McIlhenny and others as a fairly prominent symptom, though agreeing that this "locking" is not so liable to occur as in movable joint bodies or fractured and dislocated menisci. Goldthwaite and Rammstedt attribute it to either a sufficient hypertrophy of the joint tissue, or a sufficient joint relaxation to permit the ligamentous pad, previously mentioned, to drop down into the articulation and become pinched.

Disability of some degree is present in nearly all cases. Imperfect function is the rule. It may vary from slight discomfort on too-long standing to a condition of total inability to walk, sometimes with the knee joint flexed to a varying degree, and fixed. In Young's² case partial ankylosis was present. Flint⁸ gives limitation of function as one of the two noticeable subjective symptoms, while McIlhenny¹³ calls especial attention to restricted motion. In certain individuals this disablement is more noticeable in going up or down an incline or stairs.

Fatigue early after exertion is decidedly noticeable. Fixation of the joint in a flexed position does not so often occur in this condition as in dislocation of the semilunars. Objectively, obesity is given first place by Meisenbach¹⁴ who says "Lipoma arborescens of the knee joint usually occurs in patients who have taken on considerable weight. In women it is noted about the age at which one would expect the menopause, and may be associated with fatty degeneration of the heart and other organs." It may affect both knees in this type, usually one more than another. Swelling was found by Flint⁸ in his four cases, and Painter⁷ in a large series also found it present in many. Johnson,¹⁵ Goldthwaite,⁹ and Rammstedt¹⁰ all mention swelling and give some description of its location and the feeling it imparts on examination. Comparative enlargement of the affected knee when but one is giving trouble, as in traumatic knee; or the worse of the two, when both are involved, as in the fatty knee of obesity, is to be looked for and the measurements will be found to differ by from one-half cm. to several cms. With this greater size of the involved joint, there is frequently an atrophy of the quadriceps tendon and of the calf muscles from disuse.

Redness is not present as a rule, but may be seen in recently traumatized joints, whether from extra- or intra-articular causation. Surface temperature, as would be supposed, is rarely changed, and Painter, Meisenbach, Flint, Rammstedt, and McIlhenny all consider it negligible. Interference with passive motion of the joint is not found often, though in patients with excessive hypertrophy it may exist, and spasm of the hamstrings is stated to sometimes occur, maintaining the joint in partial flexion. In other words, extension is interfered with. Crepitation is commonly present and is described as soft, boggy, spongy, or meaty by most writers.

The X-ray must not be forgotten in any ex-

amination of the knee, whether in the recently traumatized joint or "chronic knee." In the lipomatous joint the rays may be more helpful by elimination than by confirmation, but as far back as 1904 Levison⁵ employed the X-ray and found a "shadow on the outside" of the joint. Generally the plates show light shadows underneath the patella, or to one side or both sides of it. On page 248 of *Progressive Medicine* for 1910, in Bloodgood's résumé, it is stated that "X-ray after inflation of the joint with oxygen will always make it."

Differentiation must be made between this affection and injury of the semilunars by the history of its cause, and by the more acute onset of the latter, the localized tenderness on pressure over the inner semilunar, as it is much more frequently injured, the persistence of pain referred to the front of the knee, less tenderness over the inner border of the patella, by the locking of the joint, and on rotation outwards there is quite severe pain owing to the frequently accompanying injury to the internal lateral ligament.

Floating cartilage, or better, loose bodies, for they may be fibrous, fatty, cartilaginous, or osseous, can often be discovered by the patient, and at different times may be in different places, unless attached by a pedicle. Effusions are common, and the pain acute when "locking" occurs, but otherwise the pain is not constant. Osteoma of the joint or exostoses will sometimes be found by manipulation of the joint, but not often unless of good size, and not if in the joint, but near it, as presented by Jones,¹⁶ where the tendons or muscles are caught around or over them. Rupture of the crucial ligaments is generally the result of more severe traumatism than is necessary to produce the other injuries or derangements of the joints.

Despite most painstaking care, errors occur inevitably in the diagnostic field, but with a better knowledge of the etiology and symptomatology, and a more thorough examination with more frequent use of the skiagraph, these errors will become less frequent.

Treatment of these masses according to Rammstedt,¹⁰ "Should be a conservative one so long as the patient is not too much inconvenienced. As long as physician and patient have patience, a gradual recovery may be brought about through massage, heat in the form of mud-baths, and steam, sponge-compresses and methodical exercise. Operation should only be resorted to in the severest cases."

Bloodgood says: "I wish to emphasize this, that patients suffering from recurrent attacks of joint pain and effusion, with or without 'locking,' should be subjected to operation. Some anatomical defect will be found which can be repaired. These operations at a late state relieve the patient of many of the symptoms, but in some cases fail to restore full joint function."

König says: "These injuries, though not of the serious type as fracture or dislocation, give no assurance to surgeon or patient that a permanent disturbance of, or even ultimate loss of, function

may not result." Flint puts the conditions thus: "It is not usual to operate upon traumatic knees in the early stages unless there is the possibility of making a fairly accurate diagnosis." It is his opinion that "there are many knees not operated at the present time which should be opened because of the benefit to be derived."

If, after an intelligent trial of the conservative plan of treatment, an operation is decided upon, the technic of the operation is simple according to Rammstedt, quoted above. Jones, also quoted above, insists "that not homage, but allegiance to asepsis is necessary for success in joint surgery," and he gives his own careful technic.

SUMMARY.

Lipoma arborescens is a not uncommon joint defect, not a true lipoma, but a hypertrophic condition of normally existent and placed tissue. Goldthwaite's classification of the causes into three types, though arbitrary, I believe to be correct, and tending to a better understanding of these cases. Trauma is the principal etiological factor in the production of all the lipomatous growths of the knee joint, true lipoma, lipoma solitarium, lipoma arborescens, and the rarer osteo-lipoma. Tuberculosis as well as syphilis and arthritis deformans, may be causative, complicating, or associated conditions, and either primary or secondary.

The pathology is that of an hypertrophy of the adipose and connective tissue elements within the articulation, resulting in a growth usually more fatty than fibrous. The histology is that of a typical chronic inflammatory condition, with whatever associated condition or conditions, tubercular, luetic, or rheumatoid.

Diagnosis is not easy or certain, but in the very obese, or with history of trauma, slow onset, imperfect function, limitation of motion, swelling, recurrent effusion, occasional "locking," fatigue after exertion, tenderness on pressure chiefly over the side of, or beneath the patella, ability to palpate a mass on one or both sides of the patella, with enlargement of the affected knee, and with the employment of the X-ray, which generally shows the shadows, the diagnosis can be made with probability.

As to the prognosis: without treatment there is little prospect of a restoration to normal either as to the articulation or its function. The treatment of the so-called "chronic knee" should be more frequently operative. If the diagnosis is made, with probability, of lipoma arborescens, it should be removed. If the patient has been suffering from a knee joint with imperfect function, who has been treated with salicylates heroically, and with careful conservative treatment, with no improvement, he should be given the advantage of the present-day operative technic.

The prospect of cure in lipoma arborescens, uncomplicated by arthritis deformans, syphilis, or tuberculosis is excellent.

Passive motion is to be instituted early, and persisted in, and the other well-known aids as heat, in the form of baking, gentle massage, and moderate exercise should be employed, as needed.

Case report. This is a report of one of several patients I have seen recently who have developed villous arthritis from trauma, one having an associated tuberculous condition in the joint, having been in a cast, in the hands of an osteopath, and in a brace; a second had suffered a dislocation of the internal semilunar after a fracture of the same; a third presented the picture I shall endeavor to bring to your notice. In the first a resection was done with excellent result; in the second a removal of the meniscus was done, after he had had tried upon him all the maneuvers possible for two osteopaths to perpetrate, with a marked increase in his pain, disability, synovial irritation, and effusion; the third was as follows:

C. B., native of Malta, age 44. Father died of Malta fever. Mother living and well. Four brothers and sisters, all dead, cause unknown. Has been well and vigorous. Neisser infection once but no joint involvement. Denies lues. Not addicted to tobacco or alcohol. No cough. No afternoon fever. No expectoration.

For past twenty years patient has had trouble with right knee. At first, knee began to swell, with no history of trauma to which the condition could be directly attributed, but patient has always been a hard worker, and subject to injuries of various kinds and degrees. This swelling would last for two or three days, then disappear. These attacks recurred two or three times yearly, no redness, no pain. This course was noted until about one year ago, when the knee became very much swollen and did not decrease in size as usual, but became steadily worse until February, 1913. Patient said that for the last few years has noted pain on arising, but after working and exercising the pain and discomfort in the knee became less noticeable. His trouble was localized to the right knee, no other joint having been involved at any time. Patient well-nourished and strong, lungs and heart normal, urine examination disclosed no renal disorder. Wassermann negative, reaction to tuberculin negative, hemoglobin 90%.

On inspection right knee is seen to be larger than its fellow, on measurement proving to exceed the left in circumference by one and three-quarters inches with some atrophy of the quadriceps. No spasm on motion, no increased surface temperature, no redness. There was a puffy swelling on both sides of the patellar ligament, extending above and below the patella, more pronounced on the inner side, and there was boggy or spongy crepitus. No effusion could be made out. X-ray plates showed light shadows under the patella, and some osteo-arthritis, more marked on the inner tibial articulation.

Diagnosis, probable lipoma arborescens, or villous arthritis, due to or complicated by the osteo-arthritis. The joint was freely opened and the masses were found extensively attached to the patellar tendon, filling the articular cavity, and extending as well from the uppermost limits of the quadriceps pouch to the lower limits of the joint capsule. These masses were very vascular, and bleeding was free wherever adhesions or attachments were freed. Some slightly cloudy fluid was present. The color was striking, being a dark purple, bordering upon black in some areas, very little of these masses being the usual yellowish color. After thorough removal of the lipomatous mass, the joint cavity was mopped with tincture of iodine, dried thoroughly, and sutured, chromic gut Nos. 1 and 2 for the capsule and silkworm gut for the skin. A cast was applied, cut down and held with adhesive and bandage. Passive motion begun on the seventh day, sutures all out by ninth day, healing intact. Massage with warm olive oil, passive and active motion were had till patient could flex to 90 degrees.

The reason for the color noted in these masses may be that the patient, being a native of Malta, may have suffered a mild attack of the fever

characteristic of the island. One of the two diagnostic symptoms noted by quarantine officers, is a recurrent swelling of the knee of which this man complained. I have found no reference to the color of the interior of these joints when affected with the characteristic arthritis of Malta fever, but it may suffice to explain whatever is not accounted for by the hemorrhage into the fatty masses caused by pinching or other trauma.

Microscopic report of tissue was as follows: Microscopic sections show the tissue to be made up primarily of normal adipose tissue. It is extremely vascular. The connective tissue cells are infiltrated with fat, and are usually blood-streaked. Some leucocytic infiltration wreathes the smaller vessels.

Strands and areas of young connective tissue cells are demonstrable especially in highly vascularized areas. These are stellate with anastomosing branches. Some are spindle-shaped. These embrace a mucoid substance. Diagnosis: Myxolipoma.

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ARTIFICIAL PNEUMOTHORAX IN ADVANCED LUNG TUBERCULOSIS.

By LEWIS SAYRE MACE, M. D., San Francisco
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During the last few years the operation of artificial pneumothorax as a therapeutic procedure in a certain type of cases of lung tuberculosis has come into general use and its value determined.

Following favorable reports from all operators who have obtained forty-five or fifty per cent. of recoveries in an otherwise hopeless condition, it is natural that the attention of clinicians should turn to the possible value of lung compression in other stages of the disease than that in which the production of an artificial pneumothorax may be said to be the operation of choice.

Tuberculosis mainly confined to one lung, not too far advanced but advancing under proper treatment, while the opposite lung is fairly free from disease, represent the ideal conditions under which a favorable outcome may be expected from this method of treatment, but only a small percentage of cases correspond to this description. The consideration of other indications for compression, such as very early cases, hemorrhage, and advanced bilateral disease in which delay of its progress or amelioration of its symptoms may be hoped for is at the present time extremely important. The following series of cases is reported for the reason that they all present the same conditions, viz., advanced bilateral disease with cavities in one lung so situated that constant and wearing cough was the result.

When lying in certain relations to the larger bronchi cavities may act as reservoirs for pus and be emptied at intervals without greatly depressing the patient. In the cases here reported the cavities were situated above the hilus, draining a large area of softened tissue directly into the bronchi and therefore rapidly weakening the patient by a constant cough which could not be controlled by drugs, or by change of position. It was hoped by compressing the lung containing these cavities to relieve this distressing symptom and therefore prolong life or at least make it more endurable.

Case I. This patient has been ill about two years and on examination presents the following conditions: Consolidation of the entire upper part of the left lung with cavities above the hilus and partial consolidation of the base. The right lung is less involved but shows consolidation above the clavicle and an area of partial consolidation extending from the hilus to the base. These observations were confirmed by the Rentgenogram. The cough was severe, and expectoration abundant and fever high. In addition to the tuberculosis the patient suffered from a chronic nephritis. During the first week in June, 1913, his left lung was compressed by one thousand cubic centimeters of nitrogen injected at intervals. Following this compression the cough became very much better, the temperature came down and expectoration practically ceased. In fact he was so much improved that he went to the country for two months. On September 24th the cough again becoming troublesome he was given another compression which relieved it. The nephritis however had become much worse and on October 23rd, 1913, he died of uremia. No further X-rays were obtained but examination of his chest showed no particular change in the condition of his lungs.

Case II. This patient was a woman, having advanced tuberculosis of both lungs, large cavities in the left and a constant and wearing cough. She was much emaciated, had high afternoon temperature and night sweats. In the hope of relieving for a time the distressing cough her left lung was compressed early in September. Following this the temperature came down, appetite improved and cough practically ceased. This improvement lasted for two months when softened tissue in the opposite lung broke down and she died in December.

Case III. This patient corresponds to the type of advanced bilateral disease before described.

There is diffuse disease of the right lung with a large cavity at the apex. The left lung shows a general infiltration with many tubercles scattered throughout, but it is less advanced than the right. The patient suffered from severe cough which seemed largely due to the cavity at the right apex. Following compression of the right lung the cough and expectoration were notably diminished. Patient improved markedly and the compression was maintained from September 22nd until the present.

The Roentgenograms taken by Dr. Anna K. Davenport after compression show the right lung compressed against the posterior wall and the alteration in size and position of the cavity. As a result of this compression the patient's cough improved very much. Expectoration that was formerly very profuse diminished to one ounce to one ounce and a half per day. The present condition is satisfactory. No marked progress has yet occurred in the opposite lung. The cough, considering the advanced nature of the disease, is not severe.

Case IV. This patient showed no change in her condition after compression. She has been ill several years and at the time of operation was much emaciated and very weak. X-rays could not be

obtained but physical examination showed advanced tuberculosis of both lungs with cavities in each. Lung compression was done in September, 1913, and repeated in October, but no effect either for better or worse could be discerned. This patient's disease has steadily progressed as would be expected and the absence of even temporary improvement is attributed to the fact that cavities were present in both lungs.

Case V. This patient was a woman 65 years old with advanced tuberculosis of both lungs. Examination and X-rays showed a large cavity in the right lung above the hilus, which was the probable cause of constant and distressing cough. In November, 1913, this lung was partially compressed with nitrogen gas which resulted in a marked reduction in cough and expectoration and in reduction of temperature. Following the operation the sputum averaged an ounce to one and one-half ounces, while before from four to six ounces daily were expectorated. As the gas became absorbed the cough increased and the patient requested further compression. The further history of the case differs in no way from the usual course of advanced tuberculosis and at the present writing the disease has increased, but no more than one would expect in similar cases without operation.

On going over this series of cases we may conclude that partial compression of the lung in certain advanced conditions of tuberculosis may result in improvement, where the distressing cough is due to a cavity draining into a large bronchus.

We are also impressed with the fact that compression of the lung in these advanced bilateral cases has not been followed by rapid increase of the process in the opposite lung.

In fact all of the cases, with the exception of case IV, were so much relieved and so much improved as to comfort, appetite and so forth, that I shall continue to advocate this procedure in those conditions which correspond to the above described classification, even though a temporary relief only may be expected.

IODINE A SPECIFIC GERMICIDE IN RESPIRATORY AFFECTIONS.

(Preliminary Report.)

By SANFORD BLUM, M. S., M. D., San Francisco Polyclinic.

Few drugs have so successfully stood the test of time as iodine. Not only does its past record bear evidence to its worth but the esteem in which it is held at present is evidenced by its unanimous employment in the practice of medicine. It is used not only as an antisyphilitic, but in gynecology, dermatology, internal medicine, pediatrics, surgery, and in every branch of medicine.

The methods of administration comprise practically all methods known to the physician. It is given internally in the form of the various salts, the tincture, and in organic combinations. Externally iodine and its compounds, organic and inorganic, are used. It is used as a local application to mucous membranes, in gargles, hypodermically, in suppositories and by inhalation.

Its effect is known. The mode of action is obscure.

Iodine is classified (with especially arsenic, iron, mercury), as an alterative. This is equivalent to

saying that its mode of action is unknown, for an "alterative is a medicine or treatment which gradually induces a change, and restores healthy functions without sensible evacuation." (Webster.) (Lippincott.)

In the treatment of respiratory affections iodine and its combinations hold an important position. That they increase and facilitate secretion by the respiratory mucous membranes is a well-known fact. It has been assumed that this action is essentially that of functional stimulation.

The purpose of this contribution is to make known a method by which iodine favorably influences respiratory infections, viz., a specific germicidal action.

In two previous communications,¹ "Clinical Features of Endemic Grippe in Children in San Francisco and Vicinity," "Grippe on the Pacific Coast,"² I have directed attention to the beneficent action of the iodides in cases of respiratory grippe. Extensive study of the effect of iodides in respiratory affections has led me to the conclusion that the iodides exert a specific germicidal action on bacteria infecting the respiratory mucous membranes. My studies on which this deduction is based include cases of influenza, staphylococcus, streptococcus and pneumococcus infections.

The conclusion that iodine has a germicidal action in respiratory affections is supported by the facts that (1) iodine and the iodides possess definite antiseptic properties, (2) iodine and the iodides are eliminated by the respiratory organs.

In corroboration of the first assertion the following observations are recorded:

Staphylococci and streptococci were inoculated upon (1) bouillon containing 1% ammonium iodide, (2) bouillon containing 1% hydriodic acid, (3) bouillon containing 1% each iodine and potassium iodide.

RESULTS.

- (1) Bouillon, 1% ammonium iodide, incubated at 37 C.
after 24 hours, clear, no growth.
after 48 hours, clear, no growth.
- (2) Bouillon, 1% hydriodic acid.
after 24 hours, clear, no growth.
after 48 hours, clear, no growth.
- (3) Bouillon, 1% iodine and 1% potassium iodide.
after 24 hours, no growth.
- (4) Bouillon (control), after 24 hours cloudy, exuberant growth.

As proof of the second assertion the following reports seem conclusive:

(1) Feb. 27, 1912, 11 a. m. Two grains ammonium iodide (in capsule) were administered to an adult male.

Feb. 28, 1912, 2 p. m. Iodine reaction in sputum positive.

Feb. 29, 1912, 12 m. Reaction in sputum negative.

(2) March 1, 1912. One grain ammonium iodide (in capsule) administered.

March 2, 1912, 12 m. Iodine reaction in sputum positive.

(3) Feb. 26, 1914. One grain ammonium iodide (capsule) given.

Iodine reaction in sputum was negative after 1, 2, 3, 5, 10, 15, 20, 25, 30 minutes.

Positive after 36 minutes.

Positive after 8 hours.

Positive after 17 hours.

Positive after 20 hours.

Positive after 22 hours.

Positive after 22½ hours.

Negative after 23 hours.

To eliminate possible source of error by gross contamination of discharges during administration the drug was given in capsule. Moreover the reaction was absent in the sputum until 36 minutes after the drug was taken. Also the iodine reaction was found to be negative in mucus obtained by swabbing the tonsils and buccal mucous membrane two hours after the iodine was administered, at which time the reaction was strongly positive in the sputum.

In the urine the reaction was negative at 1, 5, 10, 20, 30, 40, 50, 60 minutes after administering gr. i ammonium iodide in capsule.

Positive at 75 minutes.

Positive at 2 hours.

Positive at 8 hours.

Positive at 17 hours.

Positive at 20 hours.

Positive at 22 hours.

Negative at 22½ hours.

That iodine is eliminated in the secretions in quantities sufficient to inhibit bacterial growth is demonstrated by the following experiment:

Streptococci and staphylococci were inoculated upon culture media:

(a) Equal parts bouillon and urine from individual 20 hours after receiving one grain ammonium iodide (at which time iodine reaction in urine was positive). No growth occurred after 24 and 48 hours.

(b) Equal parts bouillon and urine from same individual when iodine reaction not present in urine. Luxuriant growth after 24 hours.

An interesting point developed in the above reported experiments is the possibility of employing iodine internally as a urinary antiseptic.

In the treatment of the respiratory affections I have employed with equally beneficial results, hydriodic acid and the iodides of potassium, ammonium, sodium and strontium.

The syrup of hydriodic acid is especially applicable for adults with sensitive digestion and for children. Apart from this consideration the desideratum is to give sufficient iodide to definitely affect the respiratory secretion without causing unpleasant and unfavorable symptoms—coryza, laryngitis, and digestive disturbance.

(1.) Cal. State Jour. of Med., June, 1910.

(2.) Archives of Pediatrics, Vol. xxviii, No. 8, Aug., 1911.

HYGIENIC SHOEING—ANATOMICAL FACTS VS. CONVENTION AND STYLE.*

By C. C. CRANE, M. D., San Francisco.

(Continued from page 156, April issue.)

Such shoes are approved of, or at least permitted, by the parents during infancy and childhood, but during early adolescence they are promptly discarded as though the wearing of shoes which are comfortable and allow the feet to functionate were a sin, and in their place is substituted those shoes which will not permit of unhampered foot-function; those shoes which will not promote strength of the feet; those shoes which are, in fact, prone to institute foot-ills of various kinds and in varying degrees. And this substituting performance is nothing more or less than a conventional habit, neither lacking in precedent nor warranted by anatomical facts—a habit which is a costly tribute with a painful penalty, all in the name of style!

It may be worth our while to consider some of the more prominent faults of the ordinary shoe, and among these, as may be seen in the shoe submitted, is that one which crowds the toes together, abducting the big toe and its neighbor, adducting the little toe and its neighbor, the result of which is the elimination of the normal weightbearing line and the conversion of a stable foot-mechanism into an unstable foot-mechanism.

Another fault is that the shoe is often too short for the foot, and this, coupled with the common fault of upward curving of the distal portion of the sole, favors the continuation of, if not the production of, the so-called "contracted foot," which is so often seen and which is so difficult to cure.

Still another fault is the insufficient amount of leather which is used in the construction of the vamp, especially across the instep, and it is easy to understand how such a factor, combined with the usual position of the reinforced seam which extends across this portion of the shoe, will make almost certain the development of a flattened anterior arch, another condition most obstinate to cure.

In that portion of the shoe which corresponds to the longitudinal arch of the foot exists one of the most objectionable faults in the ordinarily constructed shoe. Little or no regard is paid to the fact that an arch is present on the inner side of the foot which is so constructed that it almost entirely disappears at the outer side of the foot.

To the careless disregard of the presence of, the character of and the function of, this arched portion of the foot may be attributed, in the author's opinion, a very large proportion of the foot-ills variously alluded to as "weak feet," "foot strain," "painful feet," "pronated feet," "fallen arches" and "flat feet."

And still another fault is that which fails to recognize the normal outward excursion of the cuboid bone which is incident to weightbearing, the importance of which has been emphasized by Dane, Osgood and others.

For practical purposes the cuboid bone of the

* Read before the San Francisco County Medical Society, November 18, 1913.

foot should be considered as a wedge-shaped bone with its blunted apex directed toward the inner side of the foot and with its base forming an important portion of the outer border of the foot. Obviously, if the shoe is so constructed that it interferes with the mechanism of this bone, the result must be translated in terms of valgus. The group of major faults in shoe construction includes those abusive structures which are unjustly denominated "heels."

The heels of shoes, more particularly of women's shoes, are usually too high and the treading surface too small, the ill-effects of which are manifested by the shortening of the muscles of the calf group; by the pronounced equinus position of the foot; by the disability of the dorsiflexors of the foot; by the marked insecurity about the ankle joint where security is of the utmost importance because, as walking is practised by shoe-wearing people, the heel of the shoe is the first part to come in contact with the surface walked upon. Although the immediate and local effects of such heels are quite apparent, there may be more latent and more remote effects which are none the less serious, for it is very probable that such heels also constitute a most important factor at least in the perpetuation of, if indeed not in the production of, those postural strains which are so often referred to the knees, to the sacroiliac joints and to the back.

A not insignificant fault about the heels of shoes, and this fault is more marked in men's than in women's shoes, is the row of nails which is made use of to keep the heels from being worn away on the outer side, thus baffling the foot in its attempt to maintain a strong position of supination and forcing it into that undesirable and harmful position of pronation.

Finally there is to be mentioned a fault which is present in nearly all shoes. This is the fault of pronation. Surely a foot may not be blamed for yielding to such a pernicious influence when this influence is present when the foot is at rest and is exaggerated when the foot is used for weight-bearing.

The faults alluded to do not comprise all, but merely the more conspicuous and the more vicious ones. Although they are rather glaring even in the shoes submitted, yet they are much more evident in the usual shaped shoes as the types submitted are advertised as "orthopedic" with how little regard for veracity is left with you to decide.

It has already been insisted upon that a hygienic shoe should be patterned to fit a normal foot, but before taking up the detailed plan of construction of such a shoe it may be well to review some of the more important characteristics of the normal foot which are apparent in this model of an adult foot of an Indian who had never worn shoes.

You may notice that the inner border of the foot is slightly concaved; that there are distinct inter-digital spaces, the one between the big toe and its neighbor being large enough to accommodate an extra toe; that the big toe is slightly adducted so that when the inner borders of the feet are in contact, if straight lines are projected forward through the longitudinal axes of the big toes, such lines soon intersect; that the inner side of the

instep is thicker than the outer side; that there are two arches present, the anterior or transverse, and the posterior or longitudinal, and that these arches are distinct and yet they blend with each other; that the longitudinal arch diminishes in height very perceptibly as the outer border of the foot is approached; that the cuboid bone becomes more prominent when the foot is used for weightbearing than it is when the foot is at rest; that the plantar surface of the heel is convexed both from before backward and from side to side; that the heel is not much more than half as wide as the widest part of the toe end of the foot; that the insertion of the tendo Achilles is not in the middle of the heel but distinctly to the outer side; that when the foot is used for weightbearing, with the toes directed forward, it is in a definite position of supination which is the position of maximum strength.

The companion model which is submitted represents the same foot when carrying weight and shows the excursion which the arches enjoy and you will probably agree that this weightbearing model appears to have even a greater amount of potential power than its companion model does at rest.

Although it is hardly within the intent of the paper yet it may be interesting to contrast some of these other models with the ones already studied, their corns, callosities, bunions, distortions, deformities and general alterations serving to bear mute testimony to the punishment to which they have been subjected by faulty shoeing.

These normal characteristics are the chief ones to be considered in the construction of hygienic shoes and they serve to indicate that such a shoe should be straight or slightly concaved on the inner side; that it should be fully as long as the foot is when the foot bears its normal top-weight; that it should be roomy enough at the toe end to avoid obliteration of the inter-digital spaces; that the sole should be flexible; that it should be flat at the distal end to avoid hyperextension of the toes; that it should be slightly convexed in that portion which is covered by the transverse arch of the foot; that it should be molded in that portion which is covered by the longitudinal arch in accordance with the anatomical findings, that is: much higher on the inner side than on the outer side, and in such a manner and to such a degree that it does not interfere with or touch the longitudinal arch but will, at the same time, act as a support to this arch when it sags, as it does, physiologically, from fatigue; that the heel end of the sole should be slightly concaved from side to side and from before backward; that the heel of the shoe should be broad, low and slightly higher on the inner side than on the outer side, the latter to counteract the pronating effect of the calf group of muscles; that the inner side of the shoe, at the instep, should be fuller than the outer side, at the instep, to correspond to the greater thickness of the former and that some fullness should be present on the outer side of the shoe to permit of the valuable excursion of the cuboid bone in weight-bearing.

The shoe should be made of the blucher type

which permits of better fitting to the constantly changing size of the foot as it occurs, dependent upon the various changes of temperature, activity and rest and, too, because such a shoe permits of more freedom over the instep portion.

The question as to the advisability of wearing a high or a low shoe is not entirely insignificant. High shoes are often worn and insisted upon because of the presumption, probably a faulty presumption, that high shoes support weak ankles; but whence came the weak ankles? Did nature not do her work well, or have high shoes, with their bandaging and constricting effects, crippled these parts to such an extent that relief is sought from just the source which produced the disability? A good rule would be to wear low shoes; high shoes may be worn when the inclement weather makes their use temporarily advisable.

In order that the best results may be obtained from hygienic shoeing it is imperative that suitable stockings be used or some of the desirable effects will be counteracted if not defeated. The ideal stocking is the digitated stocking. To enhance the value of hygienic shoes the wearer should toe forward when standing and walking.

All this in the name of that complex problem of balance and human efficiency.

Discussion.

Dr. J. T. Watkins: Someone, I think it was Mathew Arnold, has defined criticism as "The effort to detect and to direct attention to whatever was best and most beautiful in the world." Accepting this definition, it is now my function and pleasant privilege to direct your attention to and to emphasize the excellent qualities of Dr. Crane's paper.

Especially am I able to do so since Dr. Crane was kind enough the other day to read his paper to me. Recognizing very clearly as I then did with what care I must prepare this discussion, if I would have you believe it to be an extemporary effort, I began to take copious notes on my cuff. And there I noticed the first point which I want to make here.

Almost at once I found that, instead of making a critical appraisal of what he had to say I was revelling in the melody of Dr. Crane's euphonic diction. I was disregarding what he said while admiring how he said it. Lest you may have been similarly affected I propose first of all to summarize Dr. Crane's paper, and then to enlarge upon portions of it.

That deformations of the feet are usually due to bad shoes; that distortions of the feet may cause no subjective symptoms; that subjective symptoms in such feet may often be relieved by proper shoes; that deformations which cannot be relieved by proper shoeing might have been prevented by proper shoeing; orthopedically speaking all of these things may be said to be axiomatic.

That manufacturers turn out bad shoes because those are the shoes the public wishes to buy does not call for argument; and that the medical profession has been remiss in not warning the public of the ill effects consequent upon the wearing of bad shoes is as certain as it is easy to explain. The profession didn't know all the facts itself, and didn't heed those it did know or suspect.

Now the first thing I want to say is that there can be such a thing as too good a shoe theoretically for a given foot. I recall that the first money I spent after I was married went to buy my wife what I considered to be a proper pair of shoes. And as she since said in the dialect of her prov-

ince, "That orthopedic shoe gave me the first cawn I ever had in all my bawn days."

In fitting a defective thin foot we must seek to find a shoe which need not necessarily have the most ideal shape; that feature can be overdone. The shoe must be that in which the particular foot in question finds the most comfort.

While I listened to Dr. Crane's strictures on the profession I looked at his foot and then at my own. In each instance my eyes were soothed by encountering the well-known orthopedic shape, suggesting perhaps more than any other one thing a ham encased in leather. But when I turned to see how Mrs. Crane and Mrs. Watkins were shod there was no denying that their shoes broke every canon of the orthopedic faith and conformed as consistently to the conventional idea of perfection. Still much as I admired Dr. Crane's feet I do not think I looked longest at them. I am pretty sure that I didn't.

However, the point I would make is this: If we, Dr. Crane and I, of the strictest sect of the Pharisees, cannot get better results than this even at home, how can we consistently expect good results from you poor "Publicans and Sinners"?

For several years I have examined the feet of all candidates for positions in the police and fire departments. In all I might have examined considerably over 3000 pairs of feet. The remuneration is about one cent a pair and is, I think you will admit, not excessive. However the opportunity to examine the feet of great numbers of supposedly normal young men was not to be overlooked. In confirmation of one of Dr. Crane's contentions I may tell you that I almost never saw a foot which did not present more or less extensive shoe distortions. Again among the first 780 persons examined I absolutely rejected 33% for defective feet.

Now about normal feet. It seems to me there can be no fixed standard of perfection, no normal deviations from which must be regarded as abnormal. From my own observations and from what I have been able to learn by studying the photographs of wild people which friends who had traveled in the Orient and elsewhere have brought me, I have seemed to be able to differentiate three primary types of foot; the relatively narrow high arched foot of the Caucasian, the expanded snow shoe (really sand shoe) type of foot of the desert dwellers, that is, of the Semitic peoples, and the Negroid or prehensile manipulate foot. This last I have seen only in pictures. It may be that the first two types are age long functional adaptations of the third; evolved from it under different environments.

It has been my experience that modern city life produces foot troubles most often among persons of Semitic extraction. This judging from their conformation is what one would naturally expect. Again among feet of the same type there are conceivable variations of height or depression of the arch, variations of pitch, of elasticity, of flexibility, and so on, which are still within the bounds of what might properly be classed as normal.

Returning now to the foot which causes painful symptoms, that is the subjectively abnormal foot, we note almost at once that there is no necessary relation between the height or depression of the arch, or for that matter of any other objective distortion, and the subjective symptoms which a foot may present. I think reports of two of my cases will illustrate the importance of this observation.

A young man was referred to me by his father whom I had relieved of some foot disturbances. The son was having trouble with plates which had been prescribed for him by an orthopedic surgeon of eminence. His feet were very, very flat, nevertheless he said he had never felt any discomfort

whatsoever nor been in any way aware of this defect till he had attended one of the universities. Here the physical director had uncovered his pedal imperfections and he was referred forthwith to the orthopedic luminary. Plates were then applied with the unfortunate result described. I threw away his plates and had appropriate shoes made for him and "he lived happily ever afterward."

Case II might be called the reverse of case I. A rather young lady came to me wearing exceedingly high metal plates of what is known as the square type. By a singular coincidence they happened to have been prescribed by the same surgeon. Instead of being low her arches were remarkably high. The plates had been raised from time to time during the four years she had been wearing them until, when she came to me, the patient had sustained severe pressure atrophy of practically all of the intrinsic muscles of the foot which was now balanced insecurely upon the apex of the plate's curve. Here was a foot beautiful to look upon but functionally all but useless. Proper shoes, massage, and appropriate exercises gradually effected a cure in this case.

Dr. Crane quoted Drs. Dane, Osgood and others as to the importance of the shape of the cuboid and of its relation to the other bones of the foot. I do not question its importance, though I doubt that we are wise in singling out any one element in the complicated mechanics of the foot for special attention.

It is barely possible that some of you may recall a paper I read once on "weak foot" and in which I quoted Bradford and Hake at some length. These gentlemen directed attention to a procession of osseous tubercles upon the under surfaces of the bones comprising the anterior pillar of the inner longitudinal arch. They showed with apparent mathematical and anatomic exactness that by flexing the great toe, a backward thrust might be exerted by the first metatarsal bone upon the first cuneiform and if the latter were held rotated outward by the pull of the tibialis anticus, this anterior metatarsal thrust would be transmitted through the internal cuneiform to the scaphoid. As a consequence the scaphoid would be crowded against the head of the astragalus and thus prevent this bone from rotating inward and downward and descending from its seat on the back, that is the upper surface, of the os calcis. I showed a plate by which all of these thrusts could in theory be accomplished. But later on I discovered that Dr. Whitman, also a prominent authority on weak foot, paid no special attention either to the cuboid, to the cuneiform or to any of their relations. This writer besides a proper shoe devised a special plate and stopped only to show that it protected, at either side of the foot, the transverse tarsal joint. Now all of these luminous ones cured most of their patients, consequently all of them must have been essentially right. If therefore points of contact in their various treatments could be discovered one would be justified in ascribing to such contact the first place in the care of defective feet. A comparison of the methods will show two such points of agreement; 1, appropriate shoeing or muscle building.

I really believe that the explanation of the conditions I have already referred to may be found in the presence or lack of an adequate musculature. A distorted foot will be symptomless if the musculature be strong enough to compensate for the mechanical defect and a perfectly shaped foot will be painful if there be a muscular insufficiency. Finally I believe that this is frequently referable to some constitutional depression or remote infection. Your patient may need a tonic or his tonsils seen to more than an arch supporter.

Because it supports this contention permit me in closing to report briefly the following failure: A lady weighing 193 lbs. who had not found relief elsewhere was brought to me by a patient. I began with massage, the Shaffer stretching machine, resistance exercises and as nearly correct a shoe as her foot would tolerate. Within three weeks she was able to go all over the golf links without discomfort. Thinking that if she could only get rid of 40 or 50 lbs. the foot would be permanent, I sent her to an eminent "internist" with the request that he reduce her. His reply was that she had a pretty big thyroid and the outlook was not encouraging; however, he would do his best. She began to lose weight rapidly, but the treatment so upset her nutritive processes that the poor lady went all to pieces and the first part of her to break down was the hard-earned muscular compensation in her feet. Given such a case again I should try to build her foot muscles up to take care of her weight. I should not try to pull the latter down to meet the limitations of her foot muscles.

Dr. Leonard Ely: Dr. Crane's remarks about the total depravity of shoemakers I agree with absolutely. The patients I have succeeded in inducing to adopt some rational form of foot wear may, if they have the means to have their shoes made to order, improve; they will tolerate the ugly shoe until the pain leaves them and no longer. It has been a source of despair to me. I have found a few fairly rational models of shoes which I recommend to people, but in every new place I move to I have to go to the shoemaker and tell him that he is to make shoes for my patients! If I go and talk to him, and whittle out a last until it pleases me, he will sometimes make the shoe as I ordered it. Every shoemaker knows more than any doctor! It is only the prospect of an immediate fee which will induce him to carry out instructions; and one cannot blame him. He is no philanthropist. He is in business to sell shoes, and if people refuse to buy well-shaped shoes, he will not keep them in stock. The standards of beauty are past finding out. To my mind a shoe that is built to the proper foot is a thing of beauty; one that is not, is ugly; but people will wear pointed shoes and high heels unless their feet cause them great suffering.

Dr. J. Rosenstirn: I would never have spoken to this somewhat accentuated specialistic subject if Dr. Rixford had not declared that no good comes from supporting the arch. He based his opinion on personal experience and the same experience prompts me to differ with him. I have suffered intensely from a breaking down of my anterior or transverse arch, and the moment I put a support in my shoe I was relieved. So you see that doctors even disagree in the result of remedies of their own ills, but I wanted to give my own experience in confirmation of those views that sensible support of the arch will do good, provided always the diagnosis is correct. In my own case I gained complete relief after the use of the appliance and, as Dr. Watkins stated of his patients, have lived happily ever since, with gratifying anticipation of a very much prolonged further happy existence.

SOCIETY REPORT

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of March, 1914, the following meetings were held:

Medical Section, Tuesday, March 3.

1. Tests of Liver Function. Thomas Addis.
2. The Cirrhoses of the Liver. J. V. Cooke.

3. Clinical Aspects of Liver Diseases, with Differential Diagnosis. R. H. Harbaugh. Discussed by H. P. Hill, Woods Hutchinson, W. Ophüls, J. H. Barbat, G. E. Ebricht, L. Elöser and W. T. Cummins.

4. The Sanitation of Swimming Baths. W. H. Kellogg.

General Meeting, Tuesday, March 10.

1. The Listerian Epoch, with Recollections. Chas. G. Levison.

2. Personal Reminiscences of the Transition Period in Surgery—the Listerian Era. Martin Regensburger.

3. The Extension of Vaccination to the Spanish Possessions, with Exhibit of Jenner's Letter regarding it. P. K. Brown.

4. George Chismore. D. W. Montgomery.

Surgical Section, Tuesday, March 17.

The following cases were shown by Stanley Stillman:

1. Cleft Palate and Hare Lip in Infant 3 months old.

2. Chondrosarcoma with Resection of Upper Jaw.

3. Partial Rhinoplasty for Cancer of Nose.

4. Plastic following Removal of Carcinoma of Buccal Mucous Membrane.

5. Case of Oxycephalus, previously operated for decompression. Osteoplasty and Transplant from Tibia.

Eye, Ear, Nose and Throat Section, Tuesday, March 24.

Exhibited microscopical sections of two cases of sarcoma of the nose; one a giant celled sarcoma and the other a chondro-sarcoma. H. B. Graham.

Two cases of supposed intracranial tumor. W. F. Schaller.

Case 1. A Finn, age 34. Family history negative. Negative Wassermann and Noguchi. Parietal headaches for two years, six months before, epileptic attacks. Intelligence normal. Anosmia in left side; percussion tenderness on left side. Articulate speech normal, but certain sensory speech disturbance suggestive of slight sensory aphasia. X-ray showed in rt. posterior fossa a triangular area of increased density, at the apex of which is an area of decreased density. Cranial nerves intact. On first examination no decrease of fields of vision, but in course of the illness there was a marked sudden decrease. No tumor reaction on turning, cochlear and vestibular reactions normal. On the day before operation, slight horizontal nystagmus to the right on looking to the right. On first examination there was a choked disc of three diopters elevation which increased to nine diopters before operation. There was slight vomiting before and after operation, but not serious.

Diagnosis: Probable left temporal tumor. At operation left temporal fossa normal. Right posterior fossa opened and marked increase of intracranial pressure found. Following operation the choked disc was one-half the former elevation, headaches present, nystagmus to the right persisted, corneal reflex on the right decreased.

Case 2. Bohemian, age 47. History of syphilis and alcohol. Frontal headaches for ten years at intervals, loss of memory, decreasing mentality; no excitement or depression, no tendency to joke. Percussion tenderness in frontal region. Ataxia and Romberg present, both variable. Left hand and foot slightly paretic. Slight left facial paresis. Sensibility hard to test. No cochlear or vestibular abnormalities. Marked tumor reaction on turning. Vision and fundi normal until immediately before operation a commencing neuro-retinitis in left eye. Serological tests—both blood and spinal—negative. A stereoscopic X-ray gives a triangular area of density at the base of anterior fossa at left of median line.

Diagnosis: Probable frontal tumor on left side. At operation nothing abnormal found. There was

a post-operative increase in optic neuritis and a pronounced aphasia.

Autopsy Report, April 3: Large tumor of the tinea choroidea extending into the third ventricle, 7 cm. ant. post. measurement by 6 cm. in breadth posteriorly. The optic nerves, especially the left are markedly compressed as is also the corpora quadrigemina. The cerebellum is free.

In the discussion Wintermute related two cases of parietal tumor seen when tumor reaction was present. He stated that the reaction is not present in tumors of the posterior fossa.

Barkan stated that recent work had discredited the value of the interlacing of the fields of vision as a diagnostic point. The acute increase in the choked disc in Case 1 pointed to pressure below the tentorium.

K. Pischel suggested the use of a tonometer to make the estimate of intracranial pressure more exact.

A. Baer stated that Barany considers the anosmia the most important differential point between cerebellar tumors and those anterior to the cerebellum.

G. P. Wintermute exhibited a case of lues of the larynx of two years duration, in which there was an extensive web formation with tolerably normal vocal cord action.

H. Y. McNaught. Case of unilateral deafness of congenital luetic origin.

G. W. Caldwell exhibited a rare case of ocular nystagmus. Boy 18, had always seen well. In childhood his companions had remarked about his eye motions. No anomalies of fundus or anterior chamber. Nystagmus stops on convergence and accommodation, vision normal, no color blindness. There is a negative Wassermann. Thyroid slightly enlarged.

H. Barkan discussed this case at length, giving the literature of published cases.

G. P. Wintermute suggested that the fact that the nystagmus does not disappear in closing the eyes strongly suggests a central origin, for an ocular nystagmus is due to a retinal irritability and closing out the light causes it to disappear.

Urological Section, Tuesday, March 31.

1. An Interesting Case of Misplaced Kidney. S. O. Beasley. Discussed by R. L. Rigdon, J. T. Watkins and M. Krotoszyner.

2. A Case of Atonic Bladder. M. Silverberg.

3. The Comparative Value of Modern Functional Kidney Tests. W. E. Stevens. Discussed by M. Krotoszyner, J. J. Hogan and R. L. Rigdon.

4. Exhibition of Specimen of Urinary Calculus. Henry Meyer.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. Barton J. Powell Friday evening, February 27. The following members were present: Drs. W. J. Backus, J. D. Dameron, S. F. Priestly, S. P. Tuggle, H. N. Cross, J. T. Davison, Minerva Goodman, Hudson Smythe, R. R. Hammond, L. R. Johnson, F. P. Clark, Mary Taylor, H. C. Peterson, Margaret Smyth, C. R. Harry, S. E. Latta, W. F. Priestly, C. F. English, Barton J. Powell, Dewey R. Powell, and R. T. McGurk, with Dr. Thomas W. Huntington of San Francisco as guest.

The minutes of the last regular meeting and the special meeting held February 13 were read and approved. The committee on admissions reported favorably on the names of Drs. Lewis, Posey, Gould and Cashatt and they were declared members of the society. The name of Dr. Bissell of Ripon was placed in the hands of the committee on admissions.

The president then called upon Dr. Huntington to read his paper on "The Surgical Treatment of Uncomplicated Tuberculous Bone Foci." The paper was intensely interesting, being a résumé of

the various forms of treatment with their merits and demerits that have been proposed for the last half century, and giving the society the benefit of the final conclusions of an expert. Dr. Huntington also gave a brief outline in his summary of his own plan of treatment of uncomplicated tuberculous bone foci.

The discussion was opened by Dr. Dameron, who enumerated several cases in which he had successfully used Dr. Huntington's plan of treatment, and further remarks were made by Drs. Powell, Harry, Hammond and Dozier.

The question of fees offered by the casualty companies was again brought up, and the resolutions of the committee appointed at a previous meeting were read and accepted. After the meeting had adjourned, the members were invited by Dr. Powell to partake of refreshments.

R. T. McGURK, Secretary.

SONOMA COUNTY.

Resolutions passed by the Sonoma County Medical Society, March 12, 1914:

Whereas, The state of California has passed an act known as the Boynton Act, whereby it is the intention of the state to provide for the care and treatment of all persons who are engaged in the various industrial pursuits, and who may be injured while so engaged; and

Whereas, The state has caused to be formed a commission for the enforcement of said act; and

Whereas, Said commission has formulated certain rules and regulations for the application of said act and have fixed a schedule of fees to be paid for medical and surgical services rendered under said act, which they believe to be as liberal as their present financial condition will justify; and

Whereas, Said act was passed for the humane purpose of caring for the unfortunates who are engaged in the several industrial pursuits as wage earners and whose income is not always adequate to defray the regular household expenses, the education of their children and the misfortunes of sickness, and as conducted by the state is in no way for other than a humane purpose; now therefore be it

Resolved, That we, as members of the medical profession of California and of the Sonoma County Medical Society will assist in carrying out the object of this act by rendering service to any person injured while engaged in the pursuit of his regular duties and coming under the jurisdiction of this act.

That no member of this society shall enter into any written contract with any insurance company but shall be eligible to do such work, provided the remittance shall be equal to that paid by the State Insurance Commission.

That it is the opinion of this society that every injured person be free to select his own physician and we respectfully ask the medical profession of California to use their efforts to have any restriction to the contrary repealed.

S. S. BOGLE,
S. Z. PEOPLES,
W. C. SHIPLEY,
J. W. SEAWELL,
W. J. KERR,
J. W. SCAMELL,
A. R. HOWARD,

Committee.

PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY.

To the Editor of the State Journal: We would be pleased to have you announce in the next issue of the California State Journal of Medicine the coming meeting of this society in Seattle, July 1, 2 and 3, 1914, and particularly the fact that Colonel Robt. H. Elliot of London, England, formerly of the Indian Medical Service, Superintendent

of the Government Ophthalmic Hospital of Madras, and Professor of Ophthalmology in the Medical College, Madras, India, will be present as guest of the Society. Colonel Elliot will deliver an address and will demonstrate his operative methods including his trephining operation for glaucoma.

Other well-known surgeons will be in attendance and a very successful meeting is assured. The officers and committees of the Society extend a cordial invitation to all Ophthalmologists and Otolaryngologists to attend the Seattle session. The time is during the most beautiful part of the delightful summer season in the Puget Sound country.

The territory embraced by the membership of the Pacific Coast Oto-Ophthalmological Society includes the states west of the Rocky Mountains and British Columbia. At the last meeting held in Portland, Oregon, in July, 1913, the program included a paper by Prof. Ernst Fuchs of Vienna. The meeting was most profitable and very enjoyable.

We beg to suggest that in the announcement you give due prominence to Colonel Elliot's coming as this will undoubtedly interest many, both those who had the pleasure of seeing him during his recent visit to this country and those who were unable to see him.

Thanking you in advance for the courtesy, I am,

Yours very truly,

WALTER K. SEELYE,
Chairman Program Committee.

BOOK REVIEWS

"Skin and Venereal Diseases." By W. L. Baum and H. N. Moyer. Practical Medicine Series. 1913. Vol. 9. Published by Year Book Publishing Co., Chicago. 1913. Price, \$1.50.

An interesting collection of things a little out of the ordinary. It is well named miscellaneous and is well worth reading in a miscellaneous mood. It is full of surprises and is food for unusual and changeable thoughts. It contains many good suggestions as to treatment of skin and venereal diseases and many good points of general interest, all of which are placed before the reader in an agreeable style.

T. D. C.

"Blood Pressure From the Clinical Standpoint."

By Francis Ashley Faught, M. D., of the Medico-Chirurgical College, Philadelphia. Octavo of 281 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1913. Price, \$3.00 net.

The author has brought together a large number of interesting and important facts on such subjects as the relation of blood pressure determinations to the diagnosis, prognosis and treatment of arterial, cardiac, and renal disorders and of infectious diseases; blood pressure in obstetric practice, in surgery, and in life insurance. Many references to the original literature are given. Important contributions, however, have been omitted; and the numerous and extensive quotations and abstracts included in the text do not show the exercise of the proper amount of criticism. The part devoted to physiology is below the standard which should be required for the use of high school students. It includes many statements as profound and exact as the following: "A normally acting circulation is shown by a normal blood pressure, which by virtue of being normal, shows that the heart action and the distribution of blood must be taking place in a normal manner." E. S. K.

"Principles of Surgery." By W. A. Bryan, A. M., M. D., Professor of Surgery and Clinical Surgery at Vanderbilt University, Nashville, Tennessee. Octavo of 677 pages with 224 original illustrations. Philadelphia and Lon-

don. W. B. Saunders Company. 1913. Cloth, \$4.00 net.

Professor Bryan in this volume has given a most valuable exposition of the principles that form the basis of surgical diagnosis and treatment. While the book will probably find its most valuable application as a safe, moderate and conservative guide for the student, its perusal cannot fail to be of interest and benefit to the practicing physician and surgeon. The especial point of merit is the wide employment of the rational pathology underlying the tissue changes in disease and repair. The book shows evidences of being written by a man who loves to teach. It is modern in every way, yet conservative, and with the exception of a few typographical errors shows great care in its make up. G. H. T.

"Nervous and Mental Diseases." By H. T. Patrick and P. Bassoe. Practical Medicine Series. 1913. Vol. X. Published by Year Book Pub. Co., Chicago. 1913. Price, \$1.50.

This little volume of 239 pages contains, in condensed form, the important neurological contributions of 1913. Only subjects of practical interest to the specialist and busy practitioner are considered. For example, the detailed accounts of the New York and Texas epidemics of cerebrospinal meningitis are taken up at length with symptomatology, complications and treatment.

All of the newer neurological data for making more exact and complete diagnoses are given due consideration. The chapter on aphasia is of especial value, in that, Dejerine, in the last International Congress gave his results of seven years' study on this subject and has suggested a new classification for these disturbances.

In fact, the volume is full of important facts and suggestions, and is one of the most valuable of the recent neurological publications of its kind. J. M. W.

"The Clinics of John B. Murphy, M. D.," at Mercy Hospital, Chicago. Volume III, Number 1. Octavo of 190 pages and 91 illustrations. Philadelphia and London: W. B. Saunders Company. 1914. Published bi-monthly. Price per year: Paper, \$8; cloth, \$12.

Contents:

Fracture of Internal and External Malleolus in a Line with the Tibio-Astragaloid Articulation.

Ankylosis of Hip due to "Lipping" of the Rim of the Acetabulum; a Collar of Bone on the Neck of the Femur; Cheilotomy; Arthroplasty.

Complete Bone Ankylosis Between Tibia and Patella and Femur; Arthroplasty; Acute Metastatic Arthritis.

Tuberculosis of the Testicle; Orchidectomy with Implantation of Paraffin Substitute for Testis.

Charcot Ankle; Removal of Articulation and Nailing of Astragalus to Tibia.

Lord Lister and Antiseptic Surgery.

Nitrous Oxid Anaesthesia.

Metastatic Infections.

Gastric Ulcer and Gastric Carcinoma.

Ununited Fracture of the Ulna. Transplantation of Bone from Tibia.

Luxation of the Patella and Fracture of the Internal Semilunar Cartilage; Description of Dr. Murphy's Operation for Luxation of the Patella.

Laminectomy for Traumatic Compression of the Spinal Cord.

Removal of Enlarged and Dilated Stump of Gall-bladder Following a Previous Operation with Secondary Perforation of its Wall by Three Calculi.

Radical Operation for Carcinoma of the Breast, with Description of Dr. Murphy's Special Technic.

"History of Medicine, With Medical Chronology, Bibliographic Data, and Test Questions." By

Fielding H. Garrison, A. B., M. D., Principal Assistant Librarian, Surgeon General's Office, Washington, D. C., Editor of the "Index Medicus," Octavo of 763 pages, many portraits. W. B. Saunders Company, Philadelphia and London. 1913. Cloth, \$6.00 net; half morocco, \$7.50 net.

Into one volume has been crowded a veritable storehouse of facts beginning with the first trace of medicine in the time of savage man with its belief in the supernatural agencies and evil spirits as cause of disease, to the present year of scientific medicine.

In chronological order we pass through the dawn of Babylonian, Egyptian, Oriental, Greek, Mohammedan civilization through the mediæval period and finally the 14th to the 20th century each 100 years being treated separately.

The association of each century of medicine with the social and cultural aspects of the time add greatly to the interest and understanding of the book. The author has for the most part taken the attitude of spectator and has left the large number of important facts and lives of history making men speak for themselves. Thus, there is plenty of stimulus every few pages to delve deeper into the subject than the author is able to do in the space allowed him—and the many references show the writer has hoped for this very result. It is a splendid book not only for the physician's library but the kind of book that will solve the problem of what to give to a lawyer friend or earnest student in any line of work when the occasion arises.

The book does not presume to displace the exhaustive histories of medicine as written by Haeser or Neuberger with their philosophy and original researches, but to rather place before the student an interesting array of facts, carefully collected and scientifically arranged for ready reference and easy comprehension. M. I. J.

"Marriage and Genetics." By Charles A. Reed, M. D., F. C. S.

Is a work of somewhat unequal character. The writer in the opening paragraphs most truly states the importance of diffusing a knowledge of the laws of heredity and their bearing on the future welfare and even the present status of the race. The work is offered with a view of teaching not the physician or the student but the general public. The present application of existing knowledge to the practical problems presented by our social conditions in relation to marriage. To this end the book is divided into two parts: the first containing general statements of the work of Galton, Weismann, Mendel and other students of genetics. This, on the whole, is done in a simple and accurate manner, although as a readable book interesting to the average man, there is not a little to be desired from the literary standpoint. So far as the scientific accuracy of the statements are concerned exception might be taken to many. For example, to classify alcoholism, pauperism and criminality among mendelian characters is an extension of his principles that is scarcely warranted by existing knowledge. Similarly the statement on page 71 that the physical, mental and moral degradation of the average Mohammedan population is to be ascribed to the system of polygamy and child marriage, is without the proper basis, seeing that the mass of all populations are monogamous in practice, whatever law may allow.

The second part of the book on applied eugenics seeks to give direct data for determining the fitness for marriage of applicants for licenses or for helping the same in forming a judgment on the desirability of entering into the married state. To this end supposedly inheritable conditions and diseases are described and assorted as eugenic and agenic (desirable and undesirable). We cannot help feeling that the puzzled youth and the blush-

ing maiden who seek assistance in the determination of their fate, from this mixed assortment of knowledge, are not likely to reach a determination that will necessarily be helpful to the race. Nevertheless this little book contains a large amount of interesting and useful information which is not always as well known by even the medical profession as it should be.

H. D'A. P.

"Diseases of the Digestive Canal." By Paul Cohnheim. From the second German edition. Edited and translated by Dudley Fulton. Third edition. Published by J. B. Lippincott Company, Philadelphia and London. 1914. Price, \$4.00.

This is an excellent book; it is clearly written and concise. No one knows better than Dr. Fulton that the theories of disordered digestion are undergoing a rapid revision and that the apparently settled problems of yesterday are still in the process of change, but what is stable and firmly established, is well described in this book.

Much helpful advice is given in history taking, and in preliminary remarks on diagnosis. For the sake of hitting an antiquated fallacy, let me quote the following:

"Significance of coating on the tongue: Most patients that suffer from chronic dyspepsia attach a great deal of importance to the appearance of their tongue. Many physicians also think they are able to form a conclusion as to the condition of the stomach from the thickness of the coating on the tongue. This is an error. A coated tongue and affections of the stomach are only indirectly related. The tongue is always coated if the patient does not chew his food, or if he masticates hurriedly; the reason for this being that mastication mechanically cleanses the tongue. For this reason the tongue is always heavily coated if there is no appetite, as in the case of acute diseases, while in chronic diseases, when the patient is masticating solids several times a day, the tongue will show scarcely any coating, though he may be suffering from either a functional or an organic disease of the stomach."*

For this and similar good counsel, the book is hereby heartily recommended to doctors in general.

S. T. P.

* Mueller and Fuchs were the first to make the observation that 62 per cent. of the healthy persons that they examined had coated tongues; and that caries of the teeth, stomatitis or catarrhal pharyngitis, etc., existed in 66 per cent. of young persons whose tongues were coated.

"Dental Electro-therapeutics." By Ernest Sturridge, L. D. S., Eng., D. D. S., Fellow of the Royal Society of Medicine, Member of the British Dental Association, London, Eng. 12mo, 318 pages, with 154 engravings. Cloth, \$2.75 net. Lea & Febiger, Philadelphia and New York. 1914.

The publication of this little volume is very timely as there is a rapidly growing demand in the dental profession for more precise knowledge upon the subject of electro-therapeutics in dental surgery.

The author recognizes the fact that the average dentist has but little knowledge of the principles which underlie the successful employment of electricity as a therapeutic agent, he has therefore endeavored to place before the profession in a concise and reliable form the fundamental principles with which the dentist must be familiar in order to employ with intelligence and benefit to his patient this (at present) little used but very valuable therapeutic agent.

The principal object of the book as stated by the author in his preface "is especially intended to bring forward the value of ionic medication in the treatment of periodontal diseases and everything pertaining to ions and their uses in dental treatment has been carefully detailed, etc., etc."

The book is divided into two sections or parts.

The first deals with electro-physics as it pertains to electro-medicine, physiology and its therapeutics as applied to dentistry and the various kinds of apparatus and appliances necessary for its proper exhibition and application. The second part deals with electro-therapeutics in the treatment of various dental diseases and abnormal oral conditions, particularly with the periodontal membrane, pyorrhea alveolaris, dental-alveolar abscess, devitalized teeth, pulpless teeth, and septic conditions of the mouth and gums.

The teaching along these lines is sound and conservative and will appeal to those dentists who are familiar with the therapeutic benefits to be derived from an intelligent use of the various electric currents in the treatment of these diseased conditions of the oral cavity.

We have, however, looked in vain for some mention of the great benefit to be derived from the application of the continued current in the treatment of hyperaemia and congestion of the dental pulp and in relieving odontalgia due to irritations not septic in their nature. This is an omission to be regretted and it is hoped that in a second edition of the book this phase of the subject may receive the attention which its demonstrated value merits.

With this exception the book is heartily commendable and it should find a place in the working library of every progressive dentist. The press work and the illustrations are fully up to the usual high standard of the publishers.

J. G. M.

"Stammering and Cognate Defects of Speech." By C. S. Bluemel, Boulder Creek, Colorado. Published by G. E. Stechert & Co., New York. 1913. Two volumes.

It is so many years since anything has appeared in English of so pretentious a nature as the present work, of 600 pages on the subject of stammering, that the reviewer acknowledges to a distinct sense of disappointment, that after several weeks of hard study, he was unable to extract anything of value out of the redundant verbosity of this poorly digested rehash of everything published on the subject—scientific or otherwise,—since the time of Schultess in the early part of the nineteenth century.

The first volume is taken up entirely with a very elementary and incomplete review of the principles of psychology, for which the reader could very much better be referred to any of the standard text books on the subject. Buried in the midst of these text-book principles, the author has concealed what is evidently the prime motive for his monumental work. As he explains it, "The theory has been developed in large part as the result of introspective evidence,—evidence as indispensable as it was uncoveted," whatever this last phrase may mean.

On page 187, vol. 1, the following paragraph occurs: "Now, since the stammer's difficulty is to produce the vowel, and is not to produce voice per se, it is evident that his difficulty must be to produce the vowel-color or vowel-quality. The stammerer's difficulty is transient auditory amnesia: he is unable to recall the sound image of the vowel that he wishes to enunciate. This, then, is the thesis of the present monograph."

As a matter of fact, some very able men, amongst whom is Gutzmann, are not at all certain that the difficulty is in producing the vowel; but allowing the author to retain for the purpose of supporting his theory this disputed fact—the key-stone of this whole argument,—the reviewer looks in vain, in the subsequent pages, for any information which would tend to show how one could make a practical application of this discovery that the stammerer is an "audito-motuer."

The second volume reminds one of an enlarged number of "Public Opinion." Mosaiced together in a most ingenious fashion, are extracts from

every form of treatment known to man. The good and bad are mixed in indescribable confusion. The caustic comments of the author on all of the methods, the constant omission of names where credit should be given, would leave any reader, unacquainted with the literature, under the impression that there were no legitimate speech experts engaged in a really scientific study of this subject.

Men of international reputation such as Gutzmann, Fröschels, Liebmann, and in our own country Hudson Makuen, are neither discussed, nor are their methods analyzed. In conclusion he gives the following sage advice, which is comparable to the milligram of radium which the tired worker extracts from a ton of pitchblende. On page 306 we find this remark: "If such amnesia appears to be present the child should be told to think how the words are going to sound."

At the end of the second volume he has appended a glossary of psychological terms which he explains, will enable youthful stutterers to better understand the meanings used in volume 1. One of these definitions seems very apropos, page 326: "Gold brick, a worthless object represented as of great value and sold for a large sum of money." The price of the present work is \$5.00.

H. H.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(This Department will be pleased to supply information concerning products passed or rejected by the Council on Pharmacy and Chemistry of the A. M. A., or submit queries to the Council when information is not available.)

Dr. K. P. enquires into the nature of the various epinephrine preparations offered and the brand designations. "New and Non-official Remedies," 1914, describes the following:

EPINEPHRINE AND EPINEPHRINE PREPARATIONS.

Epinephrine.—Epinephrine is obtained from the suprarenal gland of the sheep or other animal.

Actions and Uses.—Epinephrine acts peripherally on a variety of structures, probably by stimulating the sympathetic nerve endings. Its most important therapeutic actions consist in a constriction of the blood vessels, with consequent high rise of blood-pressure; a stimulation of the vagus center with slowing of the heart, and a direct stimulant and tonic effect on the heart muscle, similar to digitalis. Large doses also cause glycosuria. Continued administration of large doses leads to atheroma. The effect of a single dose is very fleeting. It is not irritant. The effects are seen on local application and intravenous and intramuscular injection. When given to animals, by mouth or hypodermically, moderate doses have almost no action.

Dilute watery solutions rapidly lose their strength, the deterioration being accompanied by a reddish or brownish discoloration.

The alkaloid is chiefly used locally for its vasoconstrictor action, in hemorrhage, and in catarrhal and congestive conditions. It is said to cut short the asthmatic paroxysm (being used by spraying the larynx and by hypodermic injections). Intravenous injections are effective in shock and anesthesia accidents (care being taken not to give an overdose). It has also been recommended in heart disease, Addison's disease, etc., but opinions are divided as to the benefits to be expected from oral administration.

The vasoconstrictor action of epinephrine is used to intensify and prolong the anesthetic effect of local anesthetics by retarding the circulation in the affected part and thus hindering the dilution of the anesthetic agent by too rapid absorption into the general blood-stream.

Dosage.—From 0.3 to 2.0 Cc. (5 to 30 minims) of a 1:1,000 solution every two or three hours. Hypodermically, 0.06 to 1 Cc. (1 to 15 minims) of

a 1:1,000 solution diluted with sterile water. Locally it is used in solution varying in strength from 1:15,000 to 1:1,000 for ordinary applications, in oily solution for sprays, in ointment for application to mucous membranes, such as the eye or the nose, where a slower but more lasting action is desired, and in suppositories. Since the alkaloid is insoluble, solutions in water should be made of some salt, but for the oily solutions the alkaloid itself should be employed.

Its incompatibilities are the same as those of other alkaloids. Its solutions should be kept tightly stoppered and protected from the light.

Proprietary Preparations:

Adnephryn.—The name used for epinephrine by F. Stearns & Co., Detroit, Mich.

Adrenalin.—The name used for epinephrine by Parke, Davis & Co., Detroit, Mich. It is prepared by the method of Takamine.

Supracapsulin.—The name used for epinephrine by the Cudahy Packing Co., South Omaha, Neb.

L-Suprarenin Synthetic.—L-suprarenin synthetic is epinephrine produced synthetically according to the method of Stolz & Flaecher. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a.M., Germany. (Farbwerke-Hoechst Co., New York.)

L-Suprarenin Synthetic Bitartrate.—L-suprarenin synthetic bitartrate is the acid tartrate of L-suprarenin synthetic. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a.M., Germany. (Farbwerke-Hoechst Co., New York.)

Purified Extract of Adrenal Gland.—Mulford.—Purified extract of adrenal gland, Mulford, is an extract of the suprarenal gland, standardized physiologically by measuring its effect on blood-pressure and so adjusted as to correspond to the effect of 4 per cent. of purified epinephrine. It has therefore approximately four times the strength of desiccated suprarenal gland U. S. P.

Action and Uses.—See Epinephrine.

Suprarenal Liquid.—Liquid Suprarenalis (P. D. & Co.). Suprarenal liquid is an aqueous extract of suprarenal glands, preserved with 0.8 per cent. of chlorbutanol (chloretone). Each Cc. (16 minims) of the solution represents 1 Gm. (15.4 grains) of the fresh glands.

Tyramine.—Tyramine is para-hydroxy-phenyl-ethylamine hydrochloride.

Actions and Uses.—Taken internally or injected subcutaneously tyramine increases the blood pressure; for this reason it can be used in shock or collapse; it is also claimed to be valuable for producing post-partum contraction of the uterus. It is useless as a local hemostatic.

The action is similar to epinephrine, being weaker and slower, but lasting longer.

Manufactured by Burroughs Wellcome & Co., London, England, and New York.

DEATHS FOLLOWING INJECTION OF NEO-SALVARSAN IN LOS ANGELES.

Last week (the Journal, March 14, 1914, p. 861) we noted the deaths of seven patients in the Los Angeles County Hospital following intraspinal injection of neosalvarsan. At that time we stated that a fuller report would be published later. We have since received by wire from our special correspondent the following statements from Dr. C. H. Whitman, superintendent of the hospital, and Dr. A. T. Charlton, pathologist, which embody the substance of a report made by them to the Los Angeles County Board of Supervisors:

Statement of Dr. Whitman.

I herewith submit a report covering as nearly as is possible for me to do all of the circumstances and particulars appertaining to the fatalities which occurred at the County Hospital following the administration of salvarsanized serum to eight patients, all of whom were suffering from the effects

of syphilis in advanced stages of the disease. In some there was disease of the bones. Others were at advanced stages of locomotor ataxia in which portions of the spinal cord were degenerated. The Wassermann test, which is considered reliable, was made in each and every case. In addition, cell count of the cerebrospinal fluid and the butyric-acid test were made, each corroborating the clinical diagnosis of syphilis. Hence there can be no question as to the nature of the disease from which these patients suffered.

The diagnosis having been confirmed, the question of treatment was a matter of selection. In view of the facts that the older forms of treatment had proved ineffective in syphilitic cases in which the spinal cord was involved, and that neosalvarsan, which has been regarded as a specific in the earlier stages, had proved ineffective when administered by the blood or into muscular tissue, another recognized mode of procedure was adopted, namely, the intraspinal administration of salvarsanized serum. The technic of this method is somewhat complicated, but it is exact; that is, the quantity given to each person is definitely known, and according to reports from medical authorities this method is more effective than any other. In this connection, I desire to state that the Los Angeles County Hospital, instead of being an experimental station, as might be inferred from some published accounts concerning this unfortunate affair, is in fact, although progressive, one of the most conservative of its kind, which is evidenced by the fact that the intraspinal method of using salvarsanized serum had been in use for at least a year in many medical centers throughout the country before being used in this institution, and medical reports seem to indicate that this method is becoming the method of choice by many physicians in the treatment of spinal syphilis. It follows, therefore, that the treatment here used was no experiment, and I desire at this time to emphasize the fact that no experimental treatment on human beings has been conducted in this institution since my incumbency, nor will any be tolerated.

March 7, after consultation with several physicians, all members of the attending staff, Dr. A. T. Charlton directed the administration of salvarsanized serum to eight patients in the County Hospital. The serum was prepared by himself, according to authority. As all accounts so far published in the local press concerning the preparation and administration of this remedy to these patients are more or less inaccurate, I submit herewith attached, in detail, Dr. Charlton's statement concerning the technic followed by him throughout the whole procedure. I desire to state further that from the time my attention was called to these cases until the present, I have left nothing undone that would shed light on the cause of this tragedy. I personally drove to Pasadena and got the coroner and, at his request, went for the county necropsy surgeon. I also called in consultation half a dozen or more prominent members of the profession, whose knowledge and advice I thought might be of service to us in this emergency. I personally telephoned to all of the morning newspapers, giving them the first information they had of the affair, and I have practically placed myself and the records of the hospital at the disposal of the public through the press and county officials ever since. I will state that the embalming of these bodies prior to necropsy was not done at the County Hospital, or by any one connected with the hospital, but was done without our knowledge after the coroner had removed the bodies from the hospital. It is only fair to the coroner to state that to my personal knowledge he was advised by six or more physicians that a necropsy would not reveal any characteristic lesions that would account for the deaths, and this opinion was substantiated by the necropsy. The necropsy, however, was justified since it revealed

syphilitic lesions in the lung, liver and spinal cord in a patient who had denied having syphilis, thus corroborating the clinical and laboratory diagnosis and justifying the anti-syphilitic treatment.

The most plausible explanation of the cause of death in these cases is that oxidation had taken place in the neosalvarsan. This could have occurred through some defect in the glass container that was not apparent at the time the preparation was used.

In conclusion I desire to express our appreciation of the treatment accorded our County Hospital by the great mass of the public and the press in this unfortunate affair, and I can only repeat that there is nowhere more sorrow concerning this unfortunate outcome of what was intended to be for the best health interests of the deceased patients than there is among the house and attending staffs of the Los Angeles County Hospital.

Statement of Dr. Charlton.

Friday, March 6, between 9 and 11 a. m., I withdrew about 15 c.c. of blood from the veins of the arms of eight patients. From two others only about 6 c.c. of blood were obtained. As the amount of blood received from the latter two patients furnished an insufficient quantity of serum for the spinal treatment, I decided to make a dilution which would include eight spinal and two intravenous treatments, and this was done. Two ampules were used for this dilution. On account of the lapse of time, the intravenous treatment was not used. The blood was taken through sterile pipets and placed in sterile centrifuge tubes, and the serum separated from the fibrin and red cells. The serum, which was perfectly clear, was pipetted off to the amount of 5 c.c., and this was placed in a sterile glass-stoppered bottle. To this was added 1, 2 or 3 mg. of freshly dissolved neosalvarsan in sterile normal salt solution. Following this there were added to the preparation 8 c.c. of sterile normal salt solution, a sterile graduated all-glass syringe being used. This procedure was carried out absolutely with the serums from each of the eight patients separately. The preparations were then all placed in a water-bath at a temperature of 54 C. for half an hour. They were then placed in a refrigerator for twenty hours, each bottle labeled with the patient's name and the dosage for each.

Under the usual aseptic conditions from 3 to 7 c.c. of spinal fluid were drawn from each patient. Then from each individual bottle there was taken the diluted salvarsanized serum, a sterile graduated glass syringe being used, and with this syringe the contents were introduced through the same needle by which the spinal fluid was withdrawn.—Journal of the A. M. A., March 21, 1914.

BOARD OF MEDICAL EXAMINERS, CALIFORNIA, DEC., 1913, AND JAN., 1914, SESSIONS.

Passed Written Examination for Physicians and Surgeons.

Hahnemann Med. Coll. of the Pac., Calif.; (4, 25, 1913), 79.*
Oakland Coll. of Med. & Surg., Calif.; (5, 22, 1913), 79.
Univ. of Calif., Med. Dept., Cal.; (5, 13, 1913), 87; (6, 10, 1913), 87.3.
Univ. of So. Calif., Coll. of P. & S. Med. Dept.; (6, 12, 1913), 93.7, 76.4*, 92.5.
Coll. of Med. & Surg., Ill.; (5, 14, 1909), 77*.
Georgetown Univ., Med. Dept., Wash., D. C.; (6, 13, 1913), 84.4.
McGill Univ., Canada; (6, 6, 1913), 79.3.
Med. Coll. of Ind.; (4, 24, 1902), 89.
Hahnemann Med. Coll. of Philadelphia; (6, 6, 1912), 81.6.
Harvard Med. Sch., Mass.; (6, 28, 1911), 83.
Imperial First Higher Coll., Tokyo, Japan; (12, 27, 1891),
Granted on markings obtained in Aug., 1913, examination of the Board.
Rush Med. Coll., Ill.; (6, 17, 1913), 91.4.
Tufts Coll. Med. Sch., Mass.; (6, 20, 1903), 90.
Univ. of Melbourne, Australia; (6, 12, 1911), 93.4.
Univ. of Mich., Med. Dept.; (6, 18, 1903), 96.
Univ. of Texas, Med. Dept.; (5, 30, 1909), 91.3.
Univ. of Toronto, Canada; (5, 6, 1891), 100.
Wis. Coll. of P. & S.; (5, 28, 1903), 81.2.

Failed Written Examination for Physicians and Surgeons.

Coll. of Phys. & Surg., S. F.; (6, 8, 1911), 63.***
Hahnemann Med. Coll. of the Pac., Calif.; (4, 24, 1913), 71.4.

L. A. Coll. of Osteopathy, Calif.; (6, 7, 1913), 69.4; (6, 28, 1910), 68.****

Pac. Coll. of Osteopathy, Calif.; (6, 20, 1912), 72.

Baltimore Med. Coll., Md.; (5, 30, 1913), 67.*

Barnes Med. Coll., Mo.; (11, 16, 1911), 63.*

Eclectic Med. Coll., Ohio; (5, 12, 1913), 67.*

Ky. Sch. of Med., Ky.; (7, 14, 1906), 65.1.**

Medico-Chirurgical Coll., Pa.; (6, 2, 1912), 69.5.

Meharry Med. Coll., Tenn.; (4, 22, 1913), 36.

Royal Univ. of Italy; (12, 18, 1903), 65.****

Royal Coll. of Phys. & Surg., Edinburgh and Glasgow, Scotland; (7, —, 1911), 68.4.*

Royal Univ. of Leipzig, Germany (1894), and Coll. of Phys. & Surg., S. F.; (7, 1, 1904), 68.

St. Louis Coll. of P. & S., Mo.; (7, 1, 1910), 72.3.

Willamette Med. Coll., Oreg.; (3, 30, 1904), 70.

Wis. Coll. of Phys. & Surg., Wis.; (4, 30, 1902), 61.1.

Passed Written Examination for Drugless Practitioners.

Am. Sch. of Osteopathy, Mo.; (6, 3, 1912), 77.

L. A. Coll. of Osteopathy, Calif.; (6, 4, 1913), 77.

Failed Written Examination for Drugless Practitioners.

Am. Sch. of Osteopathy, Mo.; (1, —, 1912), 41.

L. A. Coll. of Osteopathy, Calif.; (6, 6, 1913), 67.5;* (6, 4, 1913), 64.

Drugless Practitioner (no school), 65.

Drugless Practitioner (no school), 70.**

* Taken before.

Passed by Oral Examination.

Forty-seven reciprocity applicants licensed in States other than California prior to August 1, 1901.

Certificates Granted to

120 reciprocity applicants licensed in States other than California, since August 1, 1901, and one honorably discharged U. S. surgeon.

New Licentiates—Medical Doctors.

Anderson, Axel E.; Anthony, L. A.; Atwood, J. B.; Baker, A. E.; Baker, Z. A.; Ballard, C.; Barkham, F. E.; Barnet, M. A.; Bellwood, H. H.; Biddle, A. G.; Binford, N.; Black, E. C.; Blanchard, W. O.; Block, L.; Bolin, J. T.; Bolinger, H. J.; Bowers, C. H.; Bradway, E. H.; Brastad, J. P.; Braunstein, J.; Brothers, H. N.; Brown, B. C. B.; Brown, J. T.; Brownfield, W. H.; Buffum, R. L.; Bullock, A. S.; Burger, T. O.; Burton, Jas.; Bushee, G. B.; Carmichael, A. B.; Carpenter, C. R.; Carpenter, P. H.; Cecil, A. B.; Church, W. G.; Clare, M. W.; Christensen, W. T.; Cleaver, J. H.; Cline, J. W.; Colbert, J. W.; Coltrin, F. D.; Commons, E. L.; Conerty, J. M.; Cooke, W. H.; Courtenay, G. T.; Cowperthwaite, A. C.; Creelius, H. A.; Crutcher, L. P.; Davis, C. C.; Dunn, J. T.; Dederer, L. C.; Dirks, C. B.; Dodge, F. L.; Dowdle, E. E.; Ely, L. W.; Egan, B. E.; Ermentrout, S. J.; Fleming, G. J.; Flannagan, L. E.; Floreth, O. P.; Forbes, H. S.; Franklin, J. W.; Freeborn, J. A.; Freedman, L. H.; Furst, O. J.; Galbraith, W. J.; Ghent, J. A.; Gill, A. F.; Girard, F. R.; Goodall, O. P.; Grundy, G. M.; Hanford, F. W.; Hanson, W. P.; Hargrave, H. G.; Harrah, O. M.; Harvey, R. W.; Henry, W. O.; Herbert, G. S.; Hergert, C. A.; Herrick, A. B.; Hill, A. L.; Hicks, J. R.; Hilliard, R.; Hoffmann, E. R.; Horn, W. L.; Hosmer, C. M.; Howes, C.; Hughes, J. F.; Huizenga, R.; Hurd, S. W.; Iber, C. H. I.; Jenkins, J. C.; Jesberg, S. H.; Jessee, Geo. McC.; Johnson, G. F.; Jones, E. F.; Joy, W. M.; Kauffmann, H. B.; Keeton, T. A.; King, H. R.; Kirschner, H. E.; Klutho, J. C.; Lancaster, J. S.; Linhart, L. R.; Long, W. H.; Lucas, W. P.; Lynch, D. A.; MacDonald, H. E.; McDannell, W. R.; McDermid, P.; McLeish, A. H.; Macpherson, J. F.; Major, R. H.; Manahan, C. A.; Merrow, L. M.; Mills, L. H.; Miner, D. O.; Miyata, Y.; Morse, A. H.; Murphy, F. W.; Musser, P. P.; Neff, J. M.; Newton, E. A.; Nolan, T. J.; Old, F. J. T.; Orr, J. T.; Peddicord, H.; Petr, F.; Pettis, J. H.; Piperino, R. H. F.; Platner, R. E.; Powell, C. F.; Pratt, J. P.; Radcliffe, W. M.; Ransom, C. W.; Ratte, H. F.; Reed, E. N.; Rice, A. LeR.; Richardson, C. H.; Rieger, F. F.; Roberts, E. K.; Robinson, J. H.; Rogers, A. M.; Rositer, E. W.; Rowe, M. J.; Rudgers, D. W.; Sanders, A.; Sandow, B. F.; Sawyer, F. W.; Schmidt, H. C.; Sewall, C. D.; Shirk, F. M.; Silbermann, C.; Singleton, W. T.; Slemmons, J. M.; Smith, C. S.; Smith, F. L.; Smith, J. J.; Stevens, C. E.; Stoddard, C. M.; Stoddard, C. L.; Stone, A. C.; Sutton, R. L.; Sweet, C. L.; Tebbetts, J. H.; Thompson, J. M.; Thudichum, C. L.; Titus, J. H.; Tobin, P. A.; Tower, O. L.; Traber, C. H.; Trinwith, T. H.; Turner, J. H.; Turner, G. B.; Vanderhoof, D. A.; Van Tine, C.; Watson, H. G.; Whitten, W. D.; Whiteaker, H.; White, G. S.; White, F. M.; Wilcox, W. S.; Williams, J. M.; Wright, H. W.; Worthington, M. H.; Winter, F. E.; Williamson, E. L.; Williamson, N. E.; Wylder, M. K.; Zaiser, H. E.

New Licentiates—Drugless Practitioners.

Petheram, C. C.; Roop, E. D.

NEW MEMBERS.

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Harding, M. C., San Diego.
Morgan, Jr., J. D., San Diego.
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Posey, A. C., Modesto.
Stile, John, Alturas.
Walters, Paul R., Dinuba.

Gibson, Alexander, Alturas.
Ehle, H. B., Cedarville.
Evrette, E. D., Lakeview, Ore.
Smith, E. H., Lakeview, Ore.
Trachman, H. J., Santa Rosa.
O'Brien, J. T., Petaluma.
Lewis, E. G., Escalon, Cal.
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Chapin, J. E., Redwood City.
Keith, J. W., South San Francisco.
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Saphro, V. O., Los Angeles.
Dirks, C. B., Eagle Rock, Cal.
Sugarman, H., Los Angeles.
Mordoff, Chas. E., El Monte, Cal.
Mack, C. W., Agnew, Cal.
Solgaard, E., San Bernardino.
Emery, E. V., Porterville.
Merrill, Edw. R., Santa Barbara.
Wright, Harold W., Santa Barbara.
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Courtenay, G. T., San Diego.
Block, Emil C., San Diego.
Carrington, P. M., San Diego.
Ransom, J. K., Napa.
Thomason, Geo., Sanitarium.
Broome, Wm. J., Alta.
McCullough, F. E., Forest Hill, Cal.
Mardis, B. A., San Francisco.
Fabre-Rajotte, F., Sacramento.
McDonnell, C. H., Sacramento.
Morse, D. H., Hemet.
Apple, W. W., El Centro.
Standlee, C. E., Imperial.
Moore, L. R., Imperial.
Bossert, C. S., Brawley.
Le Baron, Eugene, Brawley.
West, Fred'k D., Beaumont.
Lindsey, L. L., Brawley.
McCombs, V. J., El Centro.
Peterson, Fred W., El Centro.
Abrons, Henry, Calistoga.
Alumbaugh, F. W., Napa.
Blodgett, W. L., Calistoga.
Caldwell, C. B., Napa.
Crane, H. W., Napa.
Donnelly, E. F., Napa.
Klingerman, G. E., Sanitarium, Cal.
McRae, D. M., Veterans' Home, Cal.
Ogden, G. W., Napa, Cal.

DEAD.

Alexander, E. B., Los Angeles.
Stuart, A. McG., Santa Rosa.
Sulcer, A. A., Riverside.
Gallion, Thos. W., Mariposa.
Parker, W. H., Ocean Park, Cal.
Potter, Sam'l O. L., San Francisco.
Wright, Alvin H., San Francisco.
Cook, Channing S., San Francisco.
Coffman, N. B. (Died in San Francisco).
Allen, H. C., San Fernando, Cal.
Delmont, Francis, San Francisco.

NOTICE.

Physician's case was found containing a number of instruments. Address California State Journal of Medicine, 930 Butler Bldg., S. F. Phone Douglas 2537.

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VOL. XII

JUNE, 1914.

No. 6

EDITORIAL NOTES

SAN FRANCISCO AND THE A. M. A.

The American Medical Association meets this year at Atlantic City and it will then choose the place for the meeting of 1915; the San Francisco County Medical Society and the State Medical Society have passed resolutions inviting the Association to meet in San Francisco in that, the Exposition year, but of course it is impossible to say what the Association will do in the matter until Thursday, June 25th. In some peculiar manner, the Secretary-Editor, Dr. Jones, seems to have been accused of trying to oppose the selection of San Francisco as the place of meeting for the Association in 1915. This is not at all the case. Dr. Jones has had much correspondence and many interviews with various people in regard to the proposed meeting here and has consistently taken the position that, as a Trustee of the Association, he had no right to work actively for anything that was wholly the province of the Delegates to determine. He has given such assistance as he could in the matter of furthering the distribution of information and helping those who are and were actively engaged in the effort to secure the meeting for San Francisco in 1915, during the past two years. It is probable that the Association will vote to come to San Francisco, though a number of delegates have expressed a desire to have the meeting in some intermediate city, such as Denver, which would allow the members to continue their journey and take in the Exposition.

PROCEEDINGS OF THE COUNCIL.

During the time of the Annual meeting at Santa Barbara, the Council held four meetings, the 72nd, 73rd, 74th and 75th. At the first of these meetings, held Monday night, April 13th, the Chairman presented to the Council his proposed report for the past year with recommendations, etc. The report, embodying many important suggestions having a radical bearing upon the future conduct and development of the Society, was discussed at considerable length by all the councillors present, and was finally approved as presented by the Chairman, Dr. Kenyon. This report will be found in full elsewhere in this number of the JOURNAL, together with the other reports and official proceedings.

Modoc and Lassen-Plumas County Medical Societies, which had been organized in March, were officially accepted in affiliation with the State Society.

A communication from Dr. J. H. Hurst was presented and action was deferred until the Council could confer with the officers of the Santa Barbara County Medical Society. This conference was held the next day and the Secretary was instructed to notify Dr. Hurst that a special meeting of the Council would be held the following day, April 15th, at 11:30 a. m., for the purpose of hearing what Dr. Hurst had to say. Dr. Hurst had been suspended from membership in the Santa Barbara County Medical Society for publishing in the daily press of Santa Barbara, matter reflecting upon the society and the medical profession. In the early part of the present year the sentence was changed from suspension to expulsion.

Dr. Hurst appeared at the meeting the following morning and read a statement which he had prepared, prefacing this statement by saying that he did not make request for hearing as to his suspension or expulsion, but that he requested the Council to deprive the Santa Barbara County Medical Society of its charter, rights and privileges as a component unit of the Medical Society of the State of California. The officers of the Santa Barbara County Medical Society stated the facts in regard to the acts of the Society, etc., and several resolutions were spread upon the minutes, the gist of them being that "there is in the opinion of the Council, no real foundation in fact and that this Council completely exonerates the Santa Barbara County Medical Society from the charges made against it by Dr. Hurst." As Dr. Hurst had not requested a review of the action of the Society in expelling him, this matter was not acted upon by the Council, it being considered that the Santa Barbara County Medical Society had acted properly and within its rights.

The last meeting of the Council, held Thursday, was one for organizing the new Council. Dr. C. G. Kenyon was re-elected Chairman and Dr. Philip Mills Jones was appointed Editor.

COUNTY SOCIETIES; IMPORTANT.

A number of matters directly affecting county societies and membership in them and in the State Society, the privileges of Medical Defense, etc., were acted upon by the House of Delegates and referred to the county units for action. Each county unit should take these up as soon as possible and act upon them. The only legislation by the House of Delegates which was not unanimous, was the endorsement of the proposed agreement in regard to the work under the industrial accident law; there were about ten opposing votes on this measure, but it was adopted and referred to the county units for their ratification. Four county societies have already, at the time of writing, met and rescinded resolutions previously passed, and have endorsed the action of the House of Delegates. All county units should act upon these various matters (they will be found in the Minutes of the House of Delegates, published in this issue of the JOURNAL) as soon as possible, that there may be no delay in knowing just where we stand on all of these points. More than ever is it clear that the house of delegates' plan is a good one; a body of from 90 to 100 men representing the whole state can transact the business of the Society more rapidly and more satisfactorily than could the whole mass of the Society. A surprisingly large amount of work was done in a short time and without hitch or friction of any sort.

THANKS TO THE STATE SOCIETY.

The following letter was received a short time ago and was not printed in the last number of the JOURNAL, through an oversight:

"In reference to the case of MacCoy vs. Gage, I wish to hereby express my thanks to the State Society for the malpractice defense accorded me on the cross complaint of Gage, whom I sued for the collection of my bill. At the end of a four days' trial the jury awarded me the full amount sued for. Mr. Morrow's management of the case was efficient and skilful, and my appreciation to the State Society I now tender. Sincerely, Wm. E. MacCoy."

In this action the physician either would not have collected his just bill, if it had not been for the Society, or else he would have had to spend more than the amount he collected in defending the cross-complaint. It is outrageously unjust that such a condition of things should exist and it is very largely because of it that the State Society undertook the work of medical defense and the protection of its members against suits which are nearly always little else than semi-disguised blackmail.

PROFIT OR LOSS.

A newspaper account of the recent meeting of the New York State Medical Society states that their *Journal* is published at a loss of \$4,400 annually. This seems almost incredible, as the *Journal* must have a circulation of at least 8,000 and it is, or should be, a most valuable advertising medium. Our own JOURNAL, as shown by the reports submitted and the auditor's statement, made a net profit of over \$4,100 in 1913 and its circulation is much less than half that of the *New York State Journal*. Proper advertising is a legitimate business and should be made profitable for the publication and for the advertiser; that is the attitude the Council of our Society and the editor of your JOURNAL have always held and it is part of our work to aid our advertisers in every legitimate way in our power. We do not ever print reading notices, but we guarantee the character and reliability of our advertisers and it is the duty of every member to help them and so help his own JOURNAL. The JOURNAL is now earning almost the whole amount of the salary paid the editor and the Society pays only a few hundred dollars toward it. Certainly, if this newspaper statement is correct, there must be something radically wrong with New York to make a loss on a publication that is, or should be, one of the best medical advertising mediums in the East and which ought to pay a handsome profit.

SURGEON-GENERAL'S LIBRARY.

At the Santa Barbara meeting a protest was read, calling attention to an amendment to the Army appropriation bill, which amendment would take the library of the Surgeon-General away from its present quarters and combine it with the Congressional Library and would have almost put a stop to the wonderfully good work that is being done by the machinery provided in the Surgeon-General's Library. The Secretary was instructed to take up this matter by telegram with our representatives in Washington and it is with pleasure that the information contained in the following telegram is now placed before our readers:

"Washington, D. C., May 5, 1914.

"Army bill now law. Senate amendment defeated. Medical library continues its former status.

"(Signed) JULIUS KAHN."

PHYSICIANS' STUDY TRAVELS.

The society for Physicians' Study Travels has arranged a trip for this year which will begin immediately at the close of the Atlantic City meeting of the A. M. A. The party will assemble in Philadelphia and will then visit various medical points of interest in that city, subsequently taking in White Haven, Buffalo, Niagara Falls, Toronto, Montreal, Quebec, Portland, Boston, Saranac Lake, Saratoga Springs and New York. The cost of the trip for each person will be \$180.00 and the committee having the matter in charge urges that those desiring to take part in this trip send in their names as early as possible, as the number that can be taken is strictly limited. If you are interested, address Dr. Albert Bernheim, 1225 Spruce St., Philadelphia. Clubs of this sort for trips to places of medical or scientific interest are quite common in Europe, but only in the last couple of years has anything of this sort been arranged in this country.

PUBLIC HEALTH PAMPHLETS.

The following communication has been received from the Secretary of the Council on Health and Public Instruction of the American Medical Association, 535 North Dearborn Street, Chicago, Illinois:

"I am sending you under separate cover, copies of the ten pamphlets on Conservation of Vision which have been issued so far. Six more are in the printer's hands, and there are still two more in preparation. These pamphlets can be secured from the Association Office by those interested in this work. I shall be glad to have you make such mention of this series as you see fit.

"I am also sending you a copy of the five pamphlets on public health topics which can be secured in the same way. An announcement to this effect in your JOURNAL will materially assist us in our work.

"Very truly yours,

"FREDERICK R. GREEN,

"Secretary Council on Health and
Public Instruction."

SCIENTIFIC WORK.

It is gratifying to note the steady improvement in the quality of the papers presented at the annual meetings of the Society. At the Santa Barbara meeting of this year, the general average of the papers was very high and the range of subjects presented made an exceedingly attractive and interesting program. The tuberculosis society is to be congratulated upon the activity and energy of its President, Dr. Peers, who got together a splendid program for the whole of Wednesday; a program of sufficient interest to fill the room completely during nearly all of the various sessions and to hold the interest and attention of the audience present. The papers read will be gathered together and, with some other matter, will be published in a special Tuberculosis Number of the JOURNAL to be issued at an early date. The sociologic side of this large problem was well and

fully considered and many suggestions of distinct value were presented; the Tuberculosis Number should prove to be one of great interest to our members. As a whole, the papers read at this Forty-fourth meeting were very good indeed and reflect great credit upon the essayists.

TUBERCULOSIS INITIATIVE PETITION.

For years the various anti-tuberculosis societies and private citizens interested in the solution of the tuberculosis problem of California have been confronted by a most discouraging situation. For years they have seen hundreds and thousands of men, women and children needlessly sacrificed to a preventable, curable disease. They have seen cases of tuberculosis, while yet in the curable stage, advance to an incurable stage because of the lack of facilities and funds whereby these patients could be properly cared for and restored to health and a life of usefulness to the State. They have seen incurable cases go on to death infecting the other members of their families and have been powerless to prevent the spread of the disease. These facts are so well known to all that anyone can recall without difficulty many specific instances in his own practice and among his own acquaintances.

To remedy these conditions there is now being circulated a petition to place on the ballot at the coming November election a bill to appropriate one million dollars for the purpose of providing the necessary funds with which to combat the spread of tuberculosis and care for the tuberculous poor. The bill provides that the expenditure of the money be under the control of the State Board of Health and an advisory committee of five, these five to be appointed by the Governor from a list of names furnished by the California Association for the Study and Prevention of Tuberculosis, the Medical Society of the State of California and the State Board of Health. This body will decide upon the most effective means of attacking the problem and will have power to establish and maintain dispensaries, sanatoriums and hospitals and adopt such other measures as they may see fit. The members of the advisory board receive no salaries and the amount of money that may be spent in expenses is limited to 3% of the entire appropriation and not more than 1% may be spent for their expenses in any one year.

The dispensaries are to be available to anyone applying for assistance and advice, but the sanatoriums and hospitals are limited to citizens and taxpayers or to non-citizens and non-taxpayers who have been residents of California for a period of five years. The last provision is to prevent the influx of non-residents who, some have feared, would speedily flock to California for admission to its state institutions were no such provision inserted in the bill. The campaign has met with a great deal of enthusiasm and, if given the support of the profession, should easily become a law. Anyone wishing copies of this petition for circulation can get the same by applying to the chairman of the committee, Robert A. Peers, Colfax, California.



DR. FITCH C. E. MATTISON, PRESIDENT, 1913-1914

Fitch Champlin Edmunds Mattison was born in Louisville, Kentucky, May 4, 1861, of Scotch-English descent. Attended the Zachary Taylor Pindell Preparatory School and the Maryland Institute at Baltimore. Student at the Medical Department of the University of Illinois, receiving the M. D. degree in 1888. Married Helen H. Blake, in 1889, and has one daughter. Came to California in 1898. In private practice at Chicago, 1888-1898; at Pasadena since that time. President of the Los Angeles Clinical and Pathological Society. Member of the Los Angeles

County Medical Association, the Southern California Medical Society, the Medical Society of the State of California, the American Medical Association, the American Academy of Medicine, the American Society for the Advancement of Science, the American Medical Milk Commission, and of the American Therapeutic Society. President of the Overland Club of Pasadena. Chairman of the Los Angeles Milk Commission. Member of the Los Angeles University Club, of the Pasadena Valley Hunt Club, of the Annandale Golf Club, and of the Midwick Country Club. Has written papers on medical and surgical subjects.

ADDRESS OF THE PRESIDENT AT THE
FORTY-FOURTH ANNUAL MEETING
OF THE MEDICAL SOCIETY OF THE
STATE OF CALIFORNIA—SANTA BAR-
BARA, APRIL 14, 1914.

FITCH C. E. MATTISON, M. D., President.

MEMBERS OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA:—I wish to thank the members of the Society for the honor conferred upon me in electing me your President. I feel it is indeed an honor and one that, although unmerited, will ever remain a bright spot in my medical career.

It is my privilege on this occasion to address you on some subjects of general interest to the Society and I have selected one that, owing to the limited time at my disposal, must of a necessity be treated very briefly and I trust will be the means of calling your attention to some of the problems I have been interested in as a member of this Society, and trust we may have some concerted action that will clear the way for a solution of some of them.

The medical profession have had many perplexing problems to deal with in the past and there are at the present time many very interesting ones that are looming up on the medical horizon that will take time and much thought to work out. We may say we have fairly entered that "Era of Protest" where there seems to be a protest against almost all forms of existing institutions, be it Religious, Political or Medical. Whether the rapid whirl of events in these times of mad rush for "New Things," "New Thought," "New Pleasures" will result in a flying apart of some of our old established ideas and institutions, it would be rather difficult to surmise at this time.

Most of the problems our profession have to deal with are social problems, for it is impossible for us to advance very far with preventive means for the control of infectious diseases of all kinds unless the social conditions of the people be improved. As the social conditions of the masses are made better preventive medicine will advance, better housing conditions will improve the home life of the coming generation and with better homes, better schools and more playgrounds, hygienic conditions must improve.

Evolutionary ideas are rampant particularly as they bear upon our every-day life and conditions and medical men in the future, as in the past, must take their places in the front rank to help work out the details of certain changes in our manner of dealing with the injured or sick, and make living conditions better for the well.

Social and Industrial Insurance claim a large share of the public attention at present and it is but fair to assume that in all lines of industries that the cost of production should include in such costs certain fixed charges to insure those engaged in such industries against accident, sickness and death.

Germany saw the needs of Industrial Insurance thirty years ago and the claim is made that the average German worker is efficient to-day on account of being relieved from worry and fear of

accidents and sickness. Medical authorities claim that the height and fitness of the young men who are examined for military services is improving constantly in the country and that this in a large measure is due to thirty years of industrial insurance. It has also raised the stigma of pauperism from thousands of the working class in that country, it has enabled the poor man to enter their hospitals and institutions feeling they were paying for the services rendered in those institutions and that during their enforced absence from work their family were receiving a sum sufficient to care for their needs and were not dependent on charity, a condition of affairs which will eliminate much of the neglected class of cases and in which treatment will be instituted early and much suffering prevented.

The National Insurance Act of Great Britain was first introduced into the House of Commons after a period, it is said, of two and a half years of study and preparation by its author, Honorable Lloyd-George, Chancellor of the Exchequer, on May 4th, 1911. The act includes in its scope some fifteen million people from the age of sixteen to sixty-five of both sexes, whose incomes do not exceed \$800.00 per annum. Each male contributor must pay a premium of about eight cents per week, women contributors pay six cents per week and the employer pays six cents per week for each and every employee. In addition to this the Government undertakes to contribute in the case of men, two-ninths, and of women, one-fourth of the total benefits disbursed under the act.

In England there are now on the panel 20,000 out of the 22,500 physicians in general practice in Great Britain. The Government has distributed among them \$20,500,000, an average of \$1,150 for each physician. In addition \$5,000,000 has been spent on drugs. All this was for less than one-third of the population.

Mr. Lloyd-George claims the Insurance Act has raised the remuneration of the medical profession from an average of \$750 per annum to \$2,000 per annum. This is largely due to the fact that now medical attendance is provided millions of people who formerly had no attendance.

The Industrial Insurance in Germany has been a constantly changing conflict for the past thirty years and during this time of experimentation they have been working out some very interesting data and the present imperial insurance order which went into force January 1, 1914, is a complicated piece of legislation and takes the place of all previous laws on this subject. By the new law compulsory insurance is extended to over twenty-two million people and many others are given an opportunity to take advantage of it if they so desire.

There has not been the greatest degree of harmony between the medical profession and the federation of insurance societies. By the present arrangement a free choice of doctors on the part of the patient will be allowed where it is possible, and in the event of controversies arising Arbitration Courts composed of an equal number of mem-

bers representing both sides for the settlement of controversies. No fixed fee tables are stated, but compensation will very likely be along the line of former fees.

Many of those coming under the present insurance order have formerly been receiving treatment through lodge practice, contract practice, free dispensaries and free clinics. The better class will be taken from the pauper class and may materially add to the remuneration the medical profession have been receiving in the past.

At the time the Lloyd-George Act was passed the fees offered the medical profession for caring for these individuals were not entirely satisfactory to the medical profession and probably due to the fact that the aforesaid profession were not taken wholly into his confidence in working out adequate compensation for such services, when we consider the class of individuals who are insured under this act that it applies to those earning less than \$800.00 per annum, it is doubtful whether the fees paid for such services are not all such individuals can pay, and to-day the attitude of the medical profession in Great Britain has changed and Industrial Insurance has proven a benefit to all.

Government control of all forms of Industrial Insurance undoubtedly is ideal, the adequate care of the sick or injured by competent medical men or women must come; we may not live to see it but we must meet changing conditions of industrial life that will change the present-day conditions of pauperism into a condition when every man, woman or child, sick or maimed may have competent medical or surgical attendance and not be pauperized in receiving such attendance. Does not the public to-day either through private or state channels, expend as much money each year in caring for the pauper, be he such by reason of his incapacity for labor or the offspring of those incapacitated to perform labor, as would be expended in the proper channels of industry by compelling all industries to have as a part of the cost of production, fixed charge devoted to Industrial Insurance, thereby providing against loss of all wages in case of accident or sickness?

The average laborer of to-day can barely provide for himself and family during health; loss of time caused by accident or sickness is thereby cause for either municipal, institutional or private charity. The receipt of charity for any length of time pauperizes such an individual and those depending upon him for support. Would it not be better if this individual were cared for by the results of his own labor?

The contention was that as soon as a certain class of individuals understood they could have the attention of their medical adviser at any and all times without an increase of expense to themselves there would be an increase of trivial ailments but such has not been the case, but instead many who formerly depended upon "home remedies" or advice of friends or worse still consulted a "quack" or perchance took some patent nostrum, now have competent medical advice early and

preventive means instituted early has undoubtedly saved much sickness and suffering.

Eugenics may be right and proper if we can pick out the perfect man and woman, mate them and then give adequate care to the raising of their offspring, but the human factor steps in here and we find where the idealist has not reckoned with the pauper in his scheme of eugenics.

If a census of all our state institutions were made how many of those inmates now supported by the state (which means you and me and all taxpayers), who if properly protected by a national insurance act might not now be receiving the same care but supported by the results of their own labor during health? Charity pauperizes the individual, pauperism generates paupers, criminals and the incompetent.

Could some wave of sentiment sweep over the industrial world and touch some hidden spring of eugenic origin in those captains of industry who amass great fortunes and then create, endow or maintain institutions for private charities, how much better results could be attained at no greater cost? The mere fact that the cost of production carries with it the protection due the individual worker, would eliminate much of our dependent class. In the past we have been following a policy that created a dependent class, the class that are "leaners" or "drags" on the body politic, with no confidence in themselves, no ability to do for themselves and their dependents, and we of the medical profession either in hospitals, institutions or private practice, still further pauperize them.

Does not the individual have the same rights of an insurance against accident or sickness as a building and its machinery? It is consistent with good business policy to insure building and contents against loss by fire or accident and the cost of production of such industry must pay such carrying charges. Does the individual worker, the producer, of such commodity not have an equal right with property and machinery? If so the actuary who figures out the rate per \$1000 what such risks must tax production can evolve with the assistance of the actuary who figures out health and accident risks, a rate per "day labor" of the individual laborer and it would not require the mind of an idealist to claim that the human machine is entitled to the same protection granted those material agents necessary in our industrial world.

The medical profession for years past have recognized the necessity of some form of industrial insurance and in our own state we are endeavoring to adjust ourselves to the provisions of the Working Men's Compensation Law of California. In discussing this Act we must not lose sight of the fact that some twenty-five or more states have similar acts. Following is a list of nineteen states that have some act at present: California, Connecticut, Illinois, Iowa, Kansas, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Hampshire, New Jersey, Ohio, Oregon, Rhode Island, Texas, Washington, West Virginia, Wisconsin.

In a personal communication from the chief Medical Adviser of one of these states in answer to an inquiry how the Industrial Act affected the medical profession in that state, he says, "You know our law has no first aid, so we have no fee bill; we pay no medical charges or hospital charges. The employees are starting an initiative law for first aid now, but the industrial act in this state has affected the profession considerably in other ways. It places a great deal of work upon the physician for which he receives no pay. On the other hand, the laboring men as a class do not pay their bills; but under the old system, when an injured man came to us for treatment and was not under a hospital contract, we would invariably call up his employer and ask him to stand good for the bill, which they usually did. In that case we would not send a bill to the injured man but send it direct to the employer, and the employer and man settled between themselves. Ninety-five per cent. of the work under those conditions was paid for, but under the Compensation Act, the employer takes no responsibility whatever, so when we treat a man now we have to look to him alone for compensation and I will venture to say that there are at least 90% of the bills that go unpaid where the man is not under hospital contract. At least this has been my experience, as I do private practice in addition to looking after the state's work. This thing is not only true in my experience but every other physician's as well, whom you talk to, and has been a source of a great deal of dissatisfaction with the law.

"Then the physicians claim that it has been the cause of a great many suits for malpractice. Man has a bad injury treated by some surgeon; he gets out with bad result even in the hands of the best men in the state, short leg or something that cannot be prevented. The compensation that he receives from the Act itself is very small, especially in his eyes. He looks around for somebody to sue, finds that the law bars him from suing his employer and the only one left in sight that he can sue is the doctor. Some attorney advises him to enter suit, consequently the physician is sued. There are very few of them, however, get damages, but just recently we have had one suit where the jury gave the man a verdict of \$5500.00 and another one for \$2800.00. Of course, these men were protected by casualty insurance. The number of malpractice suits within the last two years has increased about tenfold in this state; however, the larger per cent. of them are not from industrial cases. The idea to sue someone seems to be a contagion that is floating around over the entire state.

"Oregon has a law that includes first aid and they are undecided at present just how to proceed. It seems to me that the only plausible plan that is just to physician is to allow the man to select his own physician and adopt the plan of paying about 65% of the ordinary charge to a private patient on the ground that all of these bills will be paid without any question. Under those conditions a physician could do the work

and even make a creditable showing to a private patient on this argument, that the private patient who does pay, has to pay increased price because of the number who do not pay.

"I am sorry that I am not able to send you more information because this is a very important matter in the future to the medical profession in the United States. Industrial insurance has come to stay and the history of Germany and England and the attitude taken toward the profession there would certainly not be looked forward to with any enthusiasm should it happen to be the same in the United States, which I cannot help but feel will come as a natural result in the near future. The medical profession should certainly be alert as to where it is drifting on this subject. They are inclined too much to sit by and do nothing. That is certainly what happened in this state when the present law was being passed."

This is an opinion from one who knows something of the results of this Act upon the physicians in his own state. It is well for us to be alert to our own Act and its effect on our profession to see to it that professional interests as well as the workman's interests are carefully considered.

Among the results which the sponsors for some of these Acts hoped would be accomplished were:

First, furnish certain prompt and reasonable compensation to the victims of work accidents and their dependents, eighty per cent. of whom have heretofore had no right to redress under common law rules;

Second, free the courts from delay, cost and criticism incident to the great mass of personal injury litigation heretofore burdening them;

Third, relieve public and private charity of much of the destitution due to uncompensated industrial accidents;

Fourth, eliminate economic waste in payment of unnecessary lawyers, witnesses and casualty corporations and the expense and time loss due to trial and appeals;

Fifth, provide a method whereby one hundred cents shall go to injured workmen out of every dollar paid out by the employer for that purpose, premium rates automatically adjusted to actual cost;

Sixth, supplant concealment of fault in accidents by a spirit of frank study of causes; resulting in good will between employer and operative, lessening the number of preventable accidents and reducing the cost and suffering thereby.

We must also take into consideration the fact that as various authorities claim, twenty-five per cent. to thirty per cent. of this charity work done by the hospital dispensaries, and physicians will be relieved of that work, that the beneficial results of placing those workers above the need of charity much good will result.

Much discussion has resulted from the adoption by the Industrial Commission of a fixed medical and surgical fee table. The medical profession has refrained from the adoption of arbitrary fee tables in the past because it is difficult to make a

fixed charge for services in the treatment of diseases and injuries when the amount of skill and responsibility proper to charge an individual whose annual income, we will say, is \$1200.00 per annum an amount varying from ten per cent. to twelve per cent. of his annual income for a major operation, it would be just as fair and proper to charge an individual whose annual income is \$25,000.00 per annum a sum in excess of ten or twelve per cent. of his annual income as the increased responsibility would justify such charge.

The commercialization of medical and surgical services by some of the casualty companies by offering fees approximating twenty-five to thirty per cent. less than the fee tables adopted by the Industrial Commission, should not be permitted by members of the State Medical Society. Whereas it may or may not be considered ethical for our members to accept fees fixed by the State Industrial Commission, it would be decidedly unethical to commercialize such services by accepting a less fee from private corporations. Industrial Insurance, which must be recognized as one of the greatest factors of modern times from a socialistic standpoint, has come and has come to stay and it is useless to fight it if we were so inclined but some changes of its method of application as it pertains to our profession seems necessary before perfect harmony can result.

The acceptance of the proposed minimum medical and surgical fee bill, may seem proper provided the individual could have his choice of physician or surgeon, or was accorded the privilege of having his regular family physician. It would seem that an adjustment of any arbitrary rules governing the care of the individual and compensation for services can and will work out satisfactory to all concerned, for it is a fact that as the professional man acquires a comfortable competency he naturally gives up accident work and this work goes where it belongs, i. e., to the younger members of the profession and the ones who are now doing most of the emergency work. It would seem fair and equitable to leave it optional with members of our Society who wish to do this work provided compensation for such work were no less than the minimum fee bill now proposed by the State Insurance Commission.

In the event of a dispute arising such dispute could be turned over to the Council of the County Society in which such dispute arose, and any appeal from such decision by a member could be made to the Council of the State Society or a committee appointed by the Council of the State Society to arbitrate such disputes. If there be taken into consideration the twenty-five to thirty per cent. of unfortunate sick occurring in the past that have received services free either in hospital dispensary or private practice and that such services be paid for as the result the labor of such individual the ban of pauperism will be lifted from that percentage of unfortunate sick and a spirit of independence created in such individual.

We must approach the solution of some of the

changing conditions of handling industrial accidents in a spirit of fairness, fairness to all concerned for were it left to the fairness of the charges rendered most families by their family physician there could be very few criticisms of our profession but the members of our profession may not be far different in their attitude in dealing with corporations than the average individual who feels it unjust and unfair to take unfair advantage of an individual but considers it perfectly proper to take every advantage of a corporation. Our court records will show that less permanent injury results from the kick of a farmer's mule or the kick of the owner's automobile than the too sudden stopping of a train which many times results in those persistent neuroses sometimes called Railroad Spine. Lest we be considered inconsistent in our reasoning we must not permit ourselves to rush into inconsistencies and refuse permission to our members to accept fixed fees for compensation that are from twenty to twenty-five per cent. in the main above fees paid by casualty companies; fees that have been acceptable to those of our members who have been doing this class of work in the past. A fee bill which permits of some elasticity due to varying conditions requiring skill and responsibility of different degrees would seem more reasonable and just to the medical profession than a fixed fee bill. It might not require any more time to apply traction to a fractured femur than adjusting a fractured clavicle but the skill and responsibility of one far exceeds that of the other.

Much discussion and very little progress often results from the discussions of any very momentous subject in a medical society. The emotional element enters too largely into such discussion and judgment, reason and expedience of purpose of such discussions are apt to be warped, whereas such discussion, if left to the House of Delegates or Councils of County Societies results in a more careful consideration and adjustment. It is to be hoped that those selected by you to represent our interests in this and other important matters to come before them may decide upon a safe and conservative policy.

Some adjustment of the provision of Industrial Insurance, contract practice and lodge practice as it affects our members must be made by us that will make a membership in our State Society worth while. If we can make such membership stand for those standards that signify adequate preliminary education, a thorough medical education that is equal to the requirements of the Marine Hospital Service or United States Government Service, and that such membership means a guarantee of a member's fitness to practice rational medicine and surgery, it will create a necessity on the part of those outside of the membership in our Society to seek such membership as a guarantee of fitness to serve the sick and afflicted. The membership committee of a county society should be a secret committee so they would not be hampered by the personal element in the selection or rejection of an applicant. In this way they would be free to use their judgment in such

selection. Any selection would be made on merit and not to avoid criticism. We ask too much of them as it is and much good has resulted from the secret membership committee in other societies. The title of Doctor formerly stood for something; the public in consulting such an individual felt they were sure of at least finding such as used the title of Doctor were graduates in medicine and surgery. But with the multiplicity of methods invented to treat the sick and afflicted by manual, mechanical or manipulatory methods the title Doctor does not mean Doctor of Medicine. It would require the judgment of a Solomon for the average citizen to turn to his telephone or city directory and select from those with the prefix of Doctor and know what sort or kind of Doctor he was about to intrust his or his family's life with; and why should we not demand of those publishing such directories that they either designate those having the title of M. D. as such or make a separate classification and list all members of County Societies and all others under separate classification. As to "Isn" or "Athy," if there be any glory in being "in advance of" or "better than" the regular profession these individuals should have all the glory a long-suffering public can give them by making it easy for the aforesaid public finding them promptly and without confusion. If some such plan cannot be instituted it would be well for those having the degree of M. D. to use it rather than the prefix "Dr." which has become so much used by others than graduates in medicine that it is to say the least confusing and ridiculous.

Until the time arrives when Government or State Control and not therapeutic fancy designates those using the title Doctor means Doctor of Medicine, a membership in our State Society should mean a guarantee of an individual's fitness to practice the healing art; in this way a membership in each County Society means so many units of efficiency that the public can rely on as practicing rational Medicine. The Medical Society of the State of California should mean progress in everything pertaining to medicine. With the true spirit of the West we should break away from our old established ideas of what a Medical Society should be and make it a Society that means a fixed standard of membership.

The "short cuts" to the practice of the "healing art" have resulted in many "short cuts" to the "practice of medicine" and with our present Medical Practice Act which permits its licentiates to practice medicine and surgery irrespective of their therapeutic or surgical training does not give the assurance to those seeking medical or surgical assistance that such licentiate has the medical and surgical training to make them competent to handle all cases which may fall into their hands.

Until medical schools are placed under state or government control where all who expect to practice medicine and surgery must have the same standard of preliminary education, the same standard of medical education and then permit them to select what form of therapeutics they wish to study and then practice that which they are com-

petent to practice, the medical society must fix the standard, the standard of non-sectarian medicine. It is unscientific to claim that any therapeutic methods or agents of which we are not familiar have no claim for merit. If such fixed ideas had prevailed in the past, medicine and surgery could not have made the progress it has made, especially during the past decade. We must have medical schools where all therapeutic methods can be taught and put on a scientific basis for investigation. The day of the private medical school is passing and just as soon as the public demands any existing therapeutic methods, mechanical or otherwise, have institutions that are on a plane that places them above a suspicion of a desire for pecuniary gain rather than scientific advancement just so soon will the medical profession be on a plane where scientific training and not "Athy" or "Isn" will command the respect of the world.

To ridicule and condemn the various remedial methods suggested engenders controversy; controversies without investigation do not establish confidence in medicine. The only method whereby the public will be spared the spectacle of a learned profession such as ours apparently divided into various exponents of therapeutic methods of treating the sick and afflicted, is to have state institutions where all schools of medicine must be taught and taught by competent teachers. This will eliminate the private school and all methods and schools will have an equal opportunity to prove their claim for recognition. We must have these institutions where all such claims of a remedial nature can be investigated and scientifically established or condemned. A desire for personal gain or preferment keeps such Cult, Athy or Isn alive. If the exponents of such ideas should find it necessary to bring them before the scientific world as a scientific fact and not as an idea for personal gain or preferment we would find "protest" against existing forms of medicine vanish and in its stead a feeling that all methods pertaining to the healing art had its legitimate place in regular medicine.

The Council on Medical Education have been working for nine years to formulate a standard of medical education which it believed should be adopted in this country as a minimum standard and the chairman of the council at its tenth annual conference in commentary of the standard which follows:

"First, preliminary education sufficient to enable the candidate to enter our recognized universities.

"Second, a five-year medical course, the first year of which should be devoted to physics, chemistry and biology, this year to be taken either in a school of liberal arts or in the medical school.

"Third, a sixth year as an interne in a hospital."

Says in part, "Under such a scheme the majority of men would begin the study of medicine between eighteen and nineteen years of age and finish their hospital internship at twenty-five. A full college education was recognized as a desirable preparation for a limited number of men, but it was agreed that it should never be made an

absolute requirement for admission to the study of medicine, as it would make the age of graduation twenty-seven or twenty-eight years, too old an age for the physician to begin medical work.

"For the last nine years the Council on Medical Education and this conference have worked steadily and untiringly to bring about the adoption of this standard, and they have succeeded so far that this general adoption is now clearly in sight. When the conference began its work there were 28,000 medical students in this country. There were last year but 17,000. Then there were 160 medical colleges; now there are but 100. Then there were but four schools requiring more than a high school education for admission; now there are eighty. Then no state licensing board required more than a high school education; now sixteen state boards require one or two years of college work, including courses in physics, chemistry and biology. Nine years ago only a limited number of men secured hospital internship; now almost all the men graduating from the better schools serve a year or more as a hospital interne. Twenty-six state boards have withdrawn recognition from the twenty-five or thirty poor schools which are not doing acceptable work. We are clearly in sight of American standards of medical education which will not only be satisfactory, but which will compare favorably with those of England, France and Germany.

"Improvements Inspired by Medical Men: These improvements in standards have been accompanied by great improvements in the laboratory and clinical facilities in our medical schools, by the passing of the proprietary schools and by the development of the university medical school, especially the medical school as a part of the state university. Almost all that has so far been accomplished in medical education in this country has been the result of work by the medical men themselves. Very little assistance has been secured from persons outside of the profession. For a time a good deal of effort was made to secure private endowment for medical education, but with little success except in a few fortunate instances.

"State Support of Medical Education: Until recent years wealthy philanthropists have not favored medical education as they have general education, theology, hospitals and libraries. There was a long period in the world's history when literature, art and education flourished only under the support of some rich patron and were objects of his favor and caprice. In this country as medical schools emerged out of the proprietary school stage and sought university connections, some of them turned to private persons for financial support, and in some instances such private support has been secured. On the whole, however, medical schools have not been able to secure adequate financial support from private endowments. Furthermore, a comparative study of the medical schools of the world gives no reason to expect adequate support for medicine from private endowment. Nor is it desirable that medicine should depend on private support. There will always remain the great privilege and great oppor-

tunity for private endowment to assist medical education, medical research and medical charities, but the scheme of modern medicine can no longer wait for private endowment.

"Medicine has become not only a function of the state, but also one of the most important functions of the state. The time has now come when the medical profession should no longer look to private endowment but to the state for the support of medical education and research. In the interest of the people we should demand adequate state support for medicine in order that medicine in return may properly perform its great function to the state and that the people may benefit from the great possibilities offered by preventive medicine, intelligent medical practice and medical research."

In this we see that the Council on Medical Education are working out one of the most important problems of providing a standard of medical education. Until the present time the ratio of physicians to population remains about the same, 1 to every 600 of population in the larger cities. If the raising of the standard of medical education, thereby increasing the cost and a general tendency for the lowering of professional fees, should continue the profession of medicine will fail to attract those who may feel that the time and money spent in acquiring an education were not adequately compensated for by the small fees. There must be no lowering of standards, but it seems wise that some concerted effort be made by the profession to raise the average income of the general practitioner. Unless a fair income can be hoped for scientific medicine will lose out in so far as it will attract students.

State institutions should make it as possible for the medical student to acquire an education as cheaply and as thoroughly as it provides for the other scientific branches. The specializing in medicine is of a necessity increasing, for with its advances in certain lines of medicine the specialist, the man who devotes his whole time to one branch of medicine will have opportunities of advancing our scientific knowledge along those lines, the sum total of the work of a certain group of men working along definite lines would help scientific medicine much more than the same number working independently. State institutions for medical research should be a part of the functions of the state. Municipal laboratories are a vital necessity for diagnostic and preventive methods. With state and municipal laboratories and competent workers in those laboratories, scientific medicine will advance much more rapidly in the next quarter of a century than it has during the past century.

We have seen the following a certain "Book of Optimism Founded on Faith" has had and how successfully it has been commercialized. If optimism and faith can be so successfully copyrighted and large royalties paid for their use there must be something in them worth investigation; the sick person must be an optimist and must have faith, why is it not possible for us to encourage one and hope for the other?

The protective scheme for the individual such as the safeguarding of public health carries with it many and new problems; so soon as man collects in small groups either for convenience, necessity or choice, problems pertaining to protection of property and health are paramount to all other social or economical factors. He institutes police protection for his person and property and a part of that police protection must of a necessity be protection of life and health. Health boards, the most important part of such police protection, are apt to be selected with the same intelligent care that many of our police departments select the emigrant who from size and a desire to attain some form of authority over his fellow beings feels his mission in life is to protect his fellow man. Such a community is apt to have as its health officer some member of the medical profession who is chosen not for his peculiar fitness for such work but as the most available one for such duties.

Modern Sanitation and Hygiene finds most communities lacking medical men who by reason of their training are competent to handle these problems. Government agencies have found it expedient to establish means for such training and the establishment of "health districts" comprising possibly several municipalities who can be brought together for health protection should be established where the compensation would be adequate to stimulate members of the medical profession to fit themselves by proper training for such work. The splendid work done by the Marine Hospital Service would indicate that at no very distant date all health service will be a service under state or government control by those trained for such service.

Is it fair to assume that we, the human agencies who contribute by our industry to the upbuilding of a nation, are not entitled to the same consideration that is now given through our Agriculture Department by the Bureau of Animal Industry, to the agriculturist to enable him to raise better and larger crops and to raise the standard of his live stock? Still that same beneficent government can not spend any money in teaching the same agriculturist how to live better and improve his home life as well as enable him to improve the human race as well as his live stock. The same government agencies can teach him how to guard against "hog cholera," "glanders" or fruit pests but cannot afford to teach him how to guard his family against preventable diseases. Nothing has contributed so much to the upbuilding of our country from an agriculturist standpoint as the Agriculture Department. With a National Bureau of Health, having control of state health, each state divided into health districts, each district in charge of a trained sanitarian and hygienist with elimination of the political factor, not hampered by the changing conditions of our political and social life, the training and experience coupled with efficient conduct of those to whom the health of such district be entrusted is apparently the only solution of our public health problem.

When a few years ago the inability to secure for those under their care a clean and safe milk supply led a certain member of our profession to hit on the plan of instituting a plan for the certification of milk, the education of the public to the necessity of clean milk was fairly begun, this led to a study of the faulty methods used in the production and handling of the commercial milk of the city and very much has been done to remedy these methods and it is safe to assume that the educational values of the campaign for clean milk will result in a clean, wholesome milk supply coming from tubercular tested cows. With a clean milk supply the work of fighting tuberculosis will have one of the most important agencies in the prevention of tuberculosis solved. Certified milk has been a powerful educational factor, but as it constituted only about one-half of one per cent. of the milk supply of the country the bulk of the milk must be clean and safe. Owing to the widely distributed source of the milk supply of the large cities the transportation difficulty of handling such supply promptly has resulted in some of the larger cities adopting an ordinance regulating the milk supply and compelling all persons to use either certified milk or pasteurization of all raw milk other than certified. All milk should come from tubercular tested cows and pasteurization should not be the "flash" pasteurization that has been used in the past, but slow pasteurization, which gives a clean milk and one which does not sour, and in which all harmful germs are destroyed.

The National Association for the Study and Prevention of Tuberculosis with an expenditure of about \$200,000 during the past ten years have stimulated other National, State and Local Anti-tuberculosis agencies, both public and private, to an expenditure of approximately \$100,000,000 and during the year 1913 \$20,000,000 was spent for tuberculosis work, seventy per cent. of this amount was taken from the tax revenues. Assuming that of this \$20,000,000 spent in that work during 1913 that the seventy per cent. taken from tax revenues was a tax on the cost of production the necessity for such tax would result in the better housing conditions in industrial centers, thereby lessening the danger of contracting tuberculosis, but it would do more; it would supply the means for those contracting the disease during industry, of being cared for directly by the results of their own labor and thereby prevent such individual from being the recipient of charity.

There are annually in the United States about 685,000 tuberculosis patients of whom 150,000 die annually. Expressed in dollars and cents this means, allowing \$500.00 as an average yearly wage of the tuberculous working man, the incurrence of a yearly loss of \$114,000,000. To combat this loss the (1) Federal, (2) the State, and (3) the Municipal Governments are actively engaged.

The dispensary plan is being vigorously pushed by the state of Pennsylvania, the only state so far which has a state dispensary, and about \$5,000,000 has been appropriated for this purpose. It will undoubtedly require much time and

thought to work out some method of caring for the individual suffering from tuberculosis. It is claimed that not to exceed two per cent. of all those so afflicted are able to leave their homes owing to the lack of funds. When we divide tuberculosis into its several classes we will find that those contracting the disease in the course of their industrial life must be dealt with differently from the two per cent. who can afford to go to some suitable climate. It would result in the necessity of our handling the industrial cases not as a charge on some charity but in some industrial supported institution either provided by such industry or the state. Such cases as can be left in their homes without being a menace to their family may be treated successfully there, but many of the cases not too far advanced can be treated in suitable sanitariums where the benefits are twofold, first by reason of removing them from their homes where they are a menace to the other members of the family; second, by reason of the educational value of institutional training that the individual receives in such institutions.

The first state sanitarium for the treatment of tuberculosis was established by Massachusetts in 1898; to-day there are twenty-one other states which have sanatoriums and eight more are in course of construction.

This money has been used to establish and maintain 115 dispensaries in every county throughout the state. The Edinburgh system for the treatment of tuberculosis is essentially the dispensary plan in which a follow up plan is used. The patients are visited at their homes and the number of "contacts" noted and as there are usually one or two members in each family suffering from tuberculosis, these cases are sought out, instructions are given in the homes. Such cases as require it are given sanitarium treatment.

Income tax levied upon the few to benefit all is not the most rational method of combating pauperism. Why should the man receiving a compensation less than \$3,000.00 per annum be placed in the pauper class? Why not permit all to pay something, graduating the income tax so it would not be a hardship on those with an income of, say, less than \$1,000 per annum? This is the class who by reason of their more or less crowded and unsanitary homes contract the disease most readily and constitute the class that are most vitally affected by the tuberculosis problem. Better and more sanitary homes will greatly reduce the number of cases of tuberculosis and the better control of "contact" cases the better the prevention.

Why not let the income tax or a portion of it provide institutional care as well as better housing conditions for this class? They should not be deprived of their right as citizens to contribute something and thereby maintain their independence. It has been stated authoritatively that those having an income of \$3,000 or over constitute about one-tenth of the population; if so the ninety per cent. who are not included in the income tax might be taxed a small proportion of their income and let this tax constitute a tax for the stamping out of tuberculosis as it is this class who suffer most

from that disease. Such a tax could be proportionately used for educational, institutional and housing purposes. In our state we have very little of the tenement house evil to contend with; the housing court takes the place of the tenement. A proportionate amount of this tax might be used by the state or municipality to erect model housing courts, each with its community baths and playgrounds. Such courts if built by such funds financed by bonds of three and one-half to four per cent. could be self-supporting in each community and an insurance against tuberculosis and all forms of contagious or infectious diseases. As a lesson in city building they could be not only graded as to rent to the tenant but an example of pleasing architecture that would rapidly replace the usual housing court of our outskirts or river bed that are unsightly, unsanitary and breeding places for infectious and contagious diseases of all kinds other than tuberculosis, for preventive measures against tuberculosis will act twofold in also limiting preventable diseases to the accidental infection due to migrating transmission.

State control of municipal housing of the poorer classes with government supervision of all health measures would not require an expenditure of \$100,000,000 per annum for a period of many years before the results of preventive medicine would be seen in a rapid diminution of preventable diseases and with better sewerage, garbage and waste disposal the common house fly would become a relic of the past and that most potent factor in the transmission of disease can and should be destroyed if its breeding places are eliminated from the habitat of mankind. The concentrations of human beings and the usually deplorable hygienic conditions they are obliged to live under is responsible for most of the communicable diseases, if not all. The public who are not in a position to know these facts as well as the medical profession are, must be told, but demonstrable facts show them that are uncontrovertable.

The question is, how can the medical profession solve these problems? Can we do it by asking for legislation? Most assuredly No; before legislation can be secured a campaign of education to create a demand for such legislation is necessary. The public must be taught the needs of such legislation before it can be secured, and the economic value of desirable legislation established can be proven, that an economic value can be placed on preventive medicine. Demonstration of such economical value has recently been so forcibly brought to the attention of the public by the preventive means used in the building of the Panama Canal. It may be necessary to make many such demonstrations before the public will demand prevention. There are many "canal zones" here at home that need cleaning up as badly as the Panama Canal Zone.

Industrial insurance which particularly affects that class whose incomes come below the income tax exemption of \$3,000 per annum could be so amended that all incomes below that limit could proportionately pay an income tax which might be devoted to purposes more directly beneficial to

such classes. The amendment of the present income tax affecting all incomes below \$3,000 per annum should be used for insurance purposes beneficial to such classes.

Sociological problems as they affect the masses must be problems that our profession must of a necessity deal with in the line of preventive medicine and require careful consideration from all sides and particularly that side pertaining to state medicine. The function of the state should be to give adequate protection by suitable preventive measures, and that it can be done there can be no question, but the medical profession must create a demand for such legislation by educational means rather than by the use of the "lobby." They should be removed from the realms of political fancy or party measures and made a function of the state irrespective of political preference and that this can be done need not be taken as an idealistic dream if the medical profession will get together in an organization that is stronger in its makeup and broader in purpose than the average State Medical Society. Each State Society should be so many units of strength that will work as a unit when those things of vital interest to our profession are at stake. Our Society can be such a unit of strength if we will make it so. We have as our mouthpiece one of the best medical journals in the United States. If it be necessary to raise the dues for membership in our County Societies even to double the present dues and spend more money in the organization of our Society until such time as it will have every reputable practitioner of medicine in the state as members. This would make it possible for us to relieve the Editor of the JOURNAL of the business management and other duties which could be left to a staff of assistants that would make it possible to handle the work of the Society as the increase of activities demanded.

A State Medical Society should mean a Medical Society for scientific advancement run on good business principles. With increased membership a stronger organization will be possible, enabling us to enlarge our activities, especially along the line of educational work. To classify, we could

First, perfect a better organization among its members with the view of broadening its scope beyond its scientific limits and increasing the fraternal spirit.

Second, institute good business methods in dealing with legislation pertaining to the advancement of scientific medicine by interesting ourselves in the personality of our state legislature and aid in the selection of those who are competent to legislate judiciously irrespective of the quack and irregular influences.

Third, to increase the usefulness of the JOURNAL by separating the editorial from the business management, thereby making it possible to do better "team" work and increasing its usefulness. Scientific, religious, political and business interests find it necessary in the accomplishment of their highest aims to first perfect an organization for the furtherance of such aims and the medical profession so far have not taken the pains to perfect such

organization either from lack of interest or lack of fraternal cohesion. It is time for us to get together and by uniting our efforts work out some of these problems.

Organization of our Society along such lines would enable us to secure many useful measures and one of our first efforts should be directed toward securing a medical examining board for the profession that would do away with a mixed board. Our present Medical Practice Act which specifically defines that licensure should be conferred to permit the practice of medicine on one hand and to confer permits to practice Osteopathy on the other, then grants all the same privilege is an evasion rather than a correct interpretation, we grant any one reciprocity but are still supplicants for reciprocity with states where reciprocity would reflect credit or honor on us.

May calm and sober judgment prevail in handling some of these problems; be it those of immediate importance or of more remote consequences let us consider them in their broadest application to the common good.

REPORT OF THE SECRETARY AND EDITOR.

Membership. At the close of the year 1913, there were 2395 members; at the close of 1912, there were 2278 members on the roll; during 1913, 34 members died; thus it is evident that the membership had 152 accessions during the year. The present plan of requiring all membership reports to be sent in early—before March 1st—has worked admirably and this year, up to April 1st, something over 2340 members have been reported and paid for and additional names are being sent in all the time. By the end of the year the membership will be at least as large as last year, in spite of the fact that the assessment is \$6.00 this year as against \$4.00 in previous years.

With the kind assistance of Dr. Bering, Modoc and Lassen-Plumas County Medical Societies have been organized and probably two more societies will be organized before the end of the year.

All county societies should scrutinize applicants for membership very carefully, in future, and it would be an excellent thing if they would send the names of applicants to the office of the State Society, for a report upon them, before election to membership. A number of physicians have been licensed under the new law, who could not have been accepted under the old standard, and doubtless many more such cases will occur. As membership in a county unit involves the State Society, and as membership in that Society has come to be a very valuable thing, and will be increasingly valuable, we should make every effort to be sure that no one is elected to membership who is not thoroughly upright and of good professional training and ability. In the office of the State Society are comprehensive records, invaluable files of information referring to everyone who has been licensed to practice in this state or who has applied for license and been rejected; from these records it would be a simple matter to determine whether any applicant for membership were lacking in pro-

fessional training or for any other reason might be undesirable.

It is well worthy of consideration, as a matter of policy for the future building of the Society, if it would not be wise to increase the amount of the annual assessment, and do more work of various sorts for the members. We could enlarge the scope of our legal department; we could put in a credit bureau by means of which a member could get a financial rating or report on the circumstances of any patients who came to him and of whom he had no personal knowledge. Also, such a policy would provide for a reserve fund which is always a desirable thing to have on hand.

Assessment. In my judgment, the assessment should not be made less than the present amount, \$6.00, and from the promptness with which the present year's assessment has been paid, I do not think there will be any falling off in the membership. The number of damage suits for alleged malpractice was larger in 1913 than in any previous year, and the cost of defending them was very considerable. This year of 1914 shows, in the first three months, an increase over last year, though none of the suits that have been filed so far this year promises to be very expensive; but the year is young. The industrial insurance law will undoubtedly be the indirect cause of a large number of suits and there is no reason to believe that in this year or future years, for some time to come, the work of our legal department will decrease; rather, it promises to increase.

I have given a great deal of thought and study and work to the problems presented by the industrial insurance law, and I believe that the solution of them, to be presented to you in the report of the Council, is in our hands and that if the plan recommended by the Council is adopted by this House of Delegates and approved by the County Medical Societies, it will very greatly strengthen the State Society and make membership in it more valuable; and it will also secure to the members of the county units many thousands of dollars annually which they otherwise would not receive.

Register. The Register and Directory is becoming more accurate as we increase our facilities for getting information in regard to the movements of physicians. As was suggested a few years ago, it must never be regarded as a money making proposition but rather as a continual expense to the Society; if we receive from it enough to pay for the publication and distribution, we should consider ourselves fortunate.

Journal. Last year your JOURNAL reached the high-water mark in receipts from advertising and showed a clear net profit of \$4185.79 including subscriptions and allowing \$1.00 per member as subscription to the JOURNAL. Much of this increase has been the result of the work of the Chairman of the Advertising Committee, Dr. Bering, as will appear in his report to you.

The policy of the JOURNAL for the past year has in no way changed; we have endeavored to search carefully for the right and the truth and to print it fairly so that the published record may

be one not to be ashamed of in the future. Of course there have been differences of opinion for any positive action must offend some person or persons; but the Publication Committee and the Editor have been in perfect harmony in every matter of policy and in every line of definite action which the JOURNAL has taken.

The quality of the papers and contributions published during the year was better than in any previous year, and the volume contains many contributions of distinct value to medicine. Our members are producing material of which they may well be proud.

Program. There was more or less confusion this year over the preparation of the general program and that of the sections. I would suggest to your honorable body that you, in some way, clearly indicate whether the Committee on Scientific Program is to have complete supervision and control over the whole program or whether the two sections, Eye, Ear, Nose and Throat and Urology are to have complete and independent control of the programs of their sections. In regard to the action taken at the last meeting, requiring that an abstract of not more than ten lines in length be published in connection with each paper listed in the program, I beg to advise you that the instruction was not overlooked either by me or by the program committee, for I wrote to that committee several months ago calling their attention to it. Doubtless the individual contributors did not wish to comply with this rule.

County Secretaries. I wish to extend my thanks to the various county society secretaries for their co-operation, and I would venture to ask them to please be more prompt in sending news of changes in the medical population of their several communities, and, particularly, data in regard to the death of physicians.

In general. The general tone of the Society was never better or more promising than at the present time; it seems to have come to the appreciation of an overwhelming majority of our membership that their Society is really doing something for them and is a power in certain ways. Doubtless this is largely due to the work of our legal department in medical defense. All over the state can be found the feeling that a suit against a member will be fought to a finish and that the Society will not try, as insurance companies do, to get out of defending a suit on some minor technicality; the members are protecting themselves against imposition. One instance will suffice. A physician had sent in a reasonable bill for \$1000.00; the patient refused to pay and said if he was sued he would bring suit for malpractice. The member referred the case to me for my advice. I advised him, after ascertaining that the bill was reasonable, to sue. In March, both suits were tried; the physician got a verdict for the full \$1000.00 and also a verdict in the malpractice suit against him. If it had not been for the State Society behind him, he would not have collected his bill or he would have had to pay more than the thousand dollars in defending the other suit. Is it worth while?

Present Conditions. Never before have reports of membership of county units and the remittance for assessment come in so promptly as this year, nor have there been reported so many new members. At the end of March there were no liabilities or unpaid bills and there was \$7,523.35 cash in the bank on which balance we draw interest. This balance together with the income reasonably to be expected from the JOURNAL during the next nine months of the year, about \$4,500.00, ought to cover all ordinary expenses and leave something over, but of course that will not be the case if we have any unexpected and expensive suits to defend. On the first of the year the services of one clerk were dispensed with, which will effect a saving of some \$600.00 this year; this crowds us a little at times, but thus far we have been able to keep up with the work.

Never, in my experience, has the Society been in a healthier or stronger condition than it is at the present time.

PHILIP MILLS JONES,
Secretary.

TWELFTH ANNUAL REPORT OF THE COUNCIL.

TO THE PRESIDENT AND MEMBERS OF THE HOUSE OF DELEGATES:

Your Council herewith presents to you its report of the work of the year 1913, together with a statement of the audit of the accounts and the financial condition of the Society. It will immediately be apparent that the net deficiency of \$1,881.35, is caused by the unusually heavy expense of the medical defense work, and we beg to remind you that this unusual expense was pointed out to you in our report of last year. The cost of defending one single action, in San Diego, amounted to \$2,313.10, or considerably more than the amount of our net deficiency. A further analysis of the medical defense work and its cost will be given you later.

LOAN: Your honorable body authorized the Council to fix an additional assessment of \$1.00 per member in 1913, if we thought it necessary. As such a proceeding would have caused much confusion to the County Units and their members, and as our creditors were willing to wait till this year for their money, we did not make the assessment, but instead borrowed \$1,000.00 from the San Francisco County Medical Society, at 6%, for three months, which tided over the routine expenses. This was repaid when due, January 15th, 1914.

PUBLICATIONS: JOURNAL. The business of the JOURNAL showed a healthy increase during the year 1913. The gross income, allowing \$1.00 per member as subscription to the JOURNAL, is \$9,067.50 and the total expense charged to the JOURNAL, \$4,881.71, showing a net profit from this publication of \$4,185.79.

REGISTER: The advertising carried in the last Register and Directory was somewhat less than usual and when all receipts and expenses are finally reckoned, it will probably show a small loss of from \$25.00 to \$50.00. This is to be

expected and we do not anticipate that the book will ever make a profit.

MEDICAL DEFENSE: The number of demands, threatening letters, threats of suits and suits actually filed, increased in 1913 over the large number in 1912. There is every reason to believe that the accident insurance law, which went into effect January 1st, 1913, and which will be referred to later, will cause a marked increase in such suits. The law prevents the bringing of a suit against the employer and consequently many cheap lawyers will be deprived of the pleasure of bringing such "contingent" suits. It does not prevent an action against the doctor, however, and so we may look for many such actions. It is said that in some states the number of suits for alleged malpractice increased as much as ten times, after similar industrial accident insurance laws went into effect. For this reason, as well as for others, it should be carefully considered by county units, as a matter of policy, whether it is not better to somewhat restrict membership and scrutinize carefully the professional standing and ability of applicants for membership.

Furthermore, we respectfully request this House of Delegates to consider the advisability of taking some action in the matter of the relation of those who are doing contract work for lodges and similar private organizations of the "dollar-a-month" type, to membership in the Society and the benefit of medical defense which it carries with it. Should physicians who are doing this class of work be admitted to membership and should those who are at present members, be accorded the benefits of medical defense?

In analyzing the cost of the medical defense work we consider only the amounts actually paid out in 1913 and not the amount of indebtedness incurred during that year, carried as a liability in the statement of account and paid in 1914; these items will appear in the report covering the work for 1914. By counties, we find the following:

Alameda	\$ 44.15
Los Angeles.....	1,787.90
San Bernardino.....	102.50
San Diego.....	2,363.10
San Francisco.....	79.45
Santa Cruz.....	1.50
Tulare	84.50
General Retainers.....	750.00

\$5,213.10

In connection with the work in the northern part of the state, under the personal supervision of Mr. Kaufman, and all of the charges coming in the 1914 statement, there were 12 suits; none was lost; one came to trial with a verdict in our favor and the others are in various stages of waiting. A considerable number of threatening letters were received and attended to by our counsel and in some of these cases suits may eventually be brought.

Mr. Morrow reports as follows concerning the work done by him in the southern part of the state:

"In Southern California this year we lost no suits which were tried, disposed of eleven threat-

ened cases without suit filed, procured the dismissal of two cases which had been filed and were about to be tried, have two threatened suits still under investigation and advisement. We have eight cases which were filed in 1913, all except two ready for trial. In addition there are four old cases pending which were filed in 1911 and 1912 which doubtless will never come to trial. Three malpractice cases were actually tried with the result that one was won; the second resulted in a disagreement of the jury; the third, a re-trial of the second, we won."

In the average case, even if it comes to trial, the cost is not very great and the expense will come easily within our ordinary income. But occasionally there are cases like those in Los Angeles and San Diego, which are bitterly fought and in which the expense piles up rapidly and to considerable proportions.

Again it must be urged upon our members never to treat a case of fracture without taking an X-ray plate if possible and carefully preserving it. Indeed, it would be well to consider whether we should undertake to defend any member in a suit based upon the treatment of a fracture unless it has been impossible to secure an X-ray plate. Failure to do so has already cost the Society thousands of dollars.

INDUSTRIAL ACCIDENT WORK: We present to you herewith a plan for dealing with many of the problems which have arisen under the new industrial accident law, and a schedule of fees to apply to surgical work under that law, and we recommend that you adopt the plan and approve the schedule.

The general plan, which follows, was formulated at a number of conferences between Dr. Jones, representing the State Society, Dr. Kugeler, representing the San Francisco County Society, Dr. Parkinson, representing the Council and Sacramento, Dr. Gibbons, of the Industrial Commission, and representatives of a number of insurance companies; it has been approved by the Adjustment Board, representing 15 companies. The plan is the development and logical extension of the suggestions which have been made by Dr. Jones and published editorially in the last four issues of the JOURNAL.

In considering it you must remember that nothing is perfect and that few of us ever have everything that we want whenever we want it; life is a succession of compromises. In considering the fee schedule, remember that the fees are based upon the income of the injured person, which is generally very small, and not upon the wealth of the company. And also do not forget that in any serious case, the surgeon will receive a very considerable amount in excess of what he could hope to receive, if he looked to the patient for his money—and also that he is sure of getting his just fees. Incomes in excess of the maximum covered by the law, \$1,666.00 a year, are not considered in this schedule.

The fee schedule has been drawn up by a committee of three consisting of Dr. Kugeler, for the Society, Dr. Gibbons for the Industrial Commis-

sion and Mr. Bower, of the board. A number of injuries are not specified or included in this schedule and the proper compensation for treatment of them will have to be a matter of amicable adjustment in each such case. This adjustment is provided for in the plan by having a standing committee composed of representatives of the Society, the Industrial Commission and the companies, which committee can at any time and on short notice take up and adjust all such questions without formal appeal to the Commission.

In the following statement the Industrial Commission is considered as one of the companies, for it is doing the same sort of work and on the same basis and is agreeable to the general conditions as outlined.

Contracts. No contracts at flat, fixed fees for all work are to be made and those now existing are to terminate at the earliest possible date.

Fee Schedule. The fee schedule which has been prepared as heretofore indicated and is herewith presented to you, is recommended for the approval of the Medical Society of the State of California and of its various county units, as a schedule of the minimum fees to be charged for the services indicated in the schedule in the treatment of persons who may be injured as specified in the law. Additional compensation will be allowed in unusual cases for unusual services on proper representation.

Choice of Physician. The employer (or the company, if the employer is insured) is to have the right to a free choice of physician and such selections are to be made from lists of names furnished by the insurance companies, these lists of names to be the lists of members of the several county medical societies which collectively compose the Medical Society of the State of California, but no member may be compelled to do the work if he does not wish to. Provided, that in counties where there is no county medical society, or in special cases where the employer may desire to secure the services of some physician who is not a member of his county medical society, he reserves the right to do so; also provided, that in the larger centers the societies are to prepare lists of names of members who are willing to do the work and to arrange so that the services of some of them may be secured at any time, by means of a telephone exchange or some other plan by which their whereabouts may at any time be ascertained; and also provided that the companies are to be permitted to advise their policy holders that certain physicians have, in the past, done work for them satisfactorily. It is understood that an insurance company may have a regularly appointed medical referee in any given locality.

Adjustment of Fees. In case a bill rendered by a member is regarded as excessive by the employer (or company) it shall be submitted to the county medical society for scrutiny and adjustment, and if there be still failure to agree, it may be submitted to the Council of the State Society or to the Industrial Commission.

County Units and Professional Conduct. In order to carry out the provisions of this plan, it

will be necessary for each county unit to approve the schedule—in so far as it applies to the work indicated and to persons whose income does not exceed the maximum indicated in the law. Charges in excess of the proper ones, or bills unduly padded by fictitious or unnecessary visits, shall be deemed unprofessional conduct and subject to discipline by suspension or expulsion.

Let us consider two cases representing the extremes of compensation, an average of which has been considered in formulating the schedule. A workman receives a slight injury; a cut finger or the like and a single visit to a doctor is sufficient; the doctor receives a very small fee. Let us suppose the same workman, earning say \$900.00 a year and having a family to support, has a compound fracture of the femur. Ordinarily, the physician could not expect to charge more than about \$75 in such a case, and as the man's hospital expenses, etc., would have to be paid by himself, the doctor would not get any money for a very long time. Under the present law and arrangements, the doctor is sure of getting not only his \$75.00, but a considerable additional sum for subsequent visits; and his getting his fee is not a matter of months or years and problematical at that; it is a certainty.

We believe that this plan will be found to work out very satisfactorily and most heartily recommend it for your approval.

In the working out of this plan it must be remembered that the physician is no longer dealing with more or less impecunious and irresponsible individuals; he is dealing with business men who are anxious to do business properly, be charged with what the work is worth in a business-like way, and pay their bills as soon as possible. To that end every member who is willing to do the work under the act and in accordance with the plan here presented, should itemize his bills; state the date and time of each visit; if dressings are used, the nature of them and a fair charge for the material used.

The moral obligation must not be overlooked. If the plan presented is approved by you, you must remember that the State Society has undertaken to protect the insurance companies from unjust or exorbitant charges and to see that fair dealing shall exist and be enforced on the part of the members of the Society, just as the companies assure us of their intention to deal with us in absolute fairness.

In Michigan a similar law went into effect and there was no co-operation between the profession and the companies; for nearly two years there was chaos and confusion and trouble. Finally a committee of their State Society met a similar committee of adjusters and agreed upon a schedule of fair fees which, in many instances, is lower than those we have fixed upon, and in some others is higher. Your Council endeavored to avoid this period of strife and so took cognizance of the situation last December and has been endeavoring to work with the state and the companies and thus have no conflict between our members and the

persons charged with or interested in the discharge of the law.

C. G. KENYON,
Chairman.

(Unanimously approved at a meeting of the Council April 13th, 1914, after careful consideration.)

FEE SCHEDULE.

These fees represent a minimum. Fees higher than Schedule will be approved when warranted by extraordinary difficulties encountered by the surgeon.

Unusual cases and procedures not specified are entitled to same fee as specified procedures of approximately equal magnitude.

Note.

Bills must be itemized, showing date of each visit, dressing or operation, and charge for same.

The.....(Name of Company).....is fully aware of the difficulties and inequalities of an inelastic Fee Schedule for surgical service. The Schedule here presented is designed for use in connection with medical services rendered an individual with an average earning capacity of \$1,000 per annum. To this class belongs the bulk of citizens which the Boynton Act is intended to protect and relieve.

First visit including report and first examination, in injury not otherwise specified	\$2.00
Surgical dressings (materials).....	Specify Costs
Mileage beyond city limits.....	50c day, 75c night, 1 way per mile.
Assisting at Operation	Major \$10.00 Minor 5.00
Administering general anesthetic....	5.00
Testimony as to fact of injury.....	10.00

Subsequent Visits Hospital

or

Fractures.	Operation.	Home.	Office.
Reduction and First Dressings			
Nasal Bones.....	\$10.00....	\$1.50	\$1.00
Hand or Foot.....	5.00	1.50	1.00
Forearm—Leg 1 bone....	10.00	1.50	1.00
2 bones...	25.00	1.50	1.00
Femur or Humerus.....	25.00	1.50	1.00
Clavicle or Scapula.....	15.00	1.50	1.00
Patella	15.00	1.50	1.00
Mandible or Maxilla....	10.00	1.50	1.00
Pelvis	10.00	1.50	1.00
Ribs	5.00	1.50	1.00
(For compound fractures or fractures involving joints)	Add fifty per cent. to operation.		
Dislocations.			
Easy reductions without anesthesia or assistants.	5.00	1.50	1.00
Hip	10.00		

Sprains.

Large Joints, First Treatment	5.00	1.50	1.00
Small Joints	2.00	1.50	1.00

Amputations.

Finger or Toe.....	5.00	1.50	1.00
Two or more.....	10.00	1.50	1.00
Hand, Wrist, Forearm or Arm	25.00	1.50	1.00
Shoulder disarticulation...	40.00	1.50	1.00
Foot, Ankle or Leg.....	25.00	1.50	1.00
Knee or Thigh.....	40.00	1.50	1.00
Hip disarticulation.....	75.00	1.50	1.00

Special Operations.

Trephining or Resection of Skull	50.00	1.50	1.00
Laminectomy	75.00	1.50	1.00
Hernia, Radical operation.	30.00	1.50	1.00
Hernia—by Taxis—Reduction and applying truss.	5.00	1.50	1.00
Paracentesis, Thoracis or Pericardii	5.00	1.50	1.00
Tendoplasty	25.00	1.50	1.00
Catheterization of Urethra	2.50		

Foreign Bodies.

Removal from conjunctiva (one or more).....	2.00		
Removal from Cornea....	3.00		
Enucleation of the Eye...	30.00	1.50	1.00

Minor Operations.

Repair of small wounds (to 2½ inches).....	2.50	1.50	1.00
Repair of large wounds (over 2½ inches).....	5.00	1.50	1.00
Contusions, simple.....	2.00	1.50	1.00
Contusions, extensive (several in different parts of body)	4.00	1.50	1.00
Abrasions—Simple	2.00	1.50	1.00
and Extensive, depending upon severity of case.			
Abscess—incision	2.50	1.50	1.00
Removal of small foreign bodies			

MINUTES

OF THE
HOUSE OF DELEGATES
AT THE

FORTY-FOURTH ANNUAL MEETING, SANTA BARBARA, APRIL 14, 15, 16, 1914.

FIRST SESSION: TUESDAY, APRIL 14, 1914.

The house was called to order at 8:30 p. m., by the President, F. C. E. Mattison.

The roll-call disclosed the presence of 51 delegates and the President announced a quorum and the house in session and ready for business.

REFERENCE COMMITTEE.—The President announced the appointment of the usual Reference Committee on New Business, as follows: George H. Kress, Los Angeles; René Bine, San Francisco; George A. Hare, Fresno.

The report of the Secretary was then read and referred to the Reference Committee.

Report of the Council was read by the Chairman, C. G. Kenyon, and referred to the same committee.

Report supplementing the report of the Council on the subject of industrial insurance was read by H. B. A. Kugeler and referred to the same committee.

Mr. President and Members of the House of Delegates:

Pardon me if I inflict myself upon you for a few moments to discuss industrial accident insurance. My excuse is the tremendous importance of this form of legislation to the medical profession, which few seem as yet to realize. I have watched for years its dire effect on the profession in Europe and have devoted some time to a study of the literature pertaining thereto. It is true that Mr. Ira B. Cross, Secretary of our State Commission, formerly professor of economics at Stanford University, maintains that in this state industrial insurance will not be extended to cover all sickness among the working class. I seriously question that view, and as an indication of the trend in this direction I would call your attention to the fact that the various insurance companies have been writing sickness indemnity policies for some years. When the volume of business becomes sufficiently great and the financial strain of the malingering begins to be felt, the next logical move will be to step in and insist on treating the insured. At or even before this time, the state will be forced to take action.

Now the question arises: Is the medical profession going to wait, as it has done in the past, until this legislation is forced upon it, or will it take a hand in shaping a matter of such vital importance to its existence? In the present instance, no attention was paid to the subject until January, 1914. Suddenly it dawned on the medical men of this state what had happened. Like a lot of frightened sheep they huddled into their different flocks and began to bleat. Not one man in a thousand had seen the law and still fewer had read it. Would the people of this great state in legislature assembled pay any attention to their chaotic discord? They would—it was music in their ears. There were others who rejoiced at it and sought to reap a harvest therefrom. And these others were members of the medical profession, some even of the State Medical Society. It is not a matter of general knowledge, but nevertheless a fact, that two separate combinations were made—one in Los Angeles, one in San Francisco—who offered to take over the entire medical service coming under this law at a remuneration of 50 per cent. of the fee schedule as tentatively submitted by the insurance companies and by the state.

So much has been said about the fee schedule, what were the commission and the insurance companies to do? The medical profession instead of assisting was apathetic or antagonistic. The law demands that the employer or his surety, whether private or state, shall provide medical attendance at once, and if necessary for ninety days. As business men, the customary procedure was to contract with such men as were available to render this service. They realized the defects of this system and when they were invited to a conference by a committee of the San Francisco County Medical Society co-operating with a committee of the Council of the State Society, they responded cheerfully. It seemed to this combined medical committee that as industrial insurance was an economic condition which had come to stay, the only way to accomplish anything was by co-operation,—to obtain the best possible conditions under the circumstances. The arrangement brought about after numerous conferences, if accepted, will give the profession better terms than the law stipulates.

Your attention is called to the fact that after two years of useless fighting in Michigan, some one in the State Society hit on a solution similar to ours; a conference between a committee of the society and one of the insurance adjusters prepared a schedule which was submitted to the Industrial Commission. Our committee had the co-operation of the commission from the start. Curiously enough, the two schedules are so similar as to appear like copies.

It has been urged that the adoption of this fee schedule will result in a uniform reduction of fees. It is expressly stated in the schedule that it is a minimum for ordinary services as applied to persons with an income of less than \$1,000 per annum. Furthermore, a medical man with an established practice has at all times set the fee that he feels his services are worth. Again, even in the most glorious days of medicine, collecting a fee in court was a very uncertain matter. Finally, it is optional with every practitioner whether he wishes to take cases of this nature or not.

There are those who tell us that the proper attitude for the profession to assume is to wrap itself in its mantle of dignity and ignore the conditions as they exist. Like the stupid ostrich, bury our heads in the sand and refuse to see that there is any danger. They tell us that it is a small matter anyhow. O Sancta Simplicitas. We are to believe this knowing that there are at least twenty companies engaged in this business aside from the state fund. I am informed that the companies expect to spend in San Francisco County alone between \$400,000 and \$500,000 a year for medical services. With this large sum they are seriously considering the advisability of having a hospital of their own to handle their work. Personally, I feel that some of our friends who are advocating this dignified position on the part of the profession are aware of this fact and are already laying their wires to secure positions in the same.

Gentlemen, let us beware of our friends!

The plan submitted is, so far as I can find, the most satisfactory solution of this vexed problem hitherto offered. The profession would commit a grave error if it rejected this agreement.

H. B. A. KUGELER.

MEDICAL DEFENSE.—The following communication from the chief counsel of the State Society, which accompanied his voluminous report, was then read by the Secretary and referred to the same committee:

San Francisco, Cal., April 11, 1914.
To the Medical Society of the State of California,
San Francisco, California:

Gentlemen—In connection with my report as to the malpractice suits during the year 1913, I have to advise you as follows:

Twenty-three cases for malpractice have been commenced in various parts of the State, as shown by my report and Mr. Morrow's report. In more than twenty more cases, litigation was threatened, but no action was brought.

I believe that the widespread knowledge of the defense accorded free of charge by the Medical Society to all doctors in good standing, contributes very largely to diminishing the cases that are actually brought, when so many threats are made. I think that many more cases are never heard of because of the medical defense.

All lawyers know that they cannot settle with the doctors for the costs of a trial, and the attorneys' fees the doctor would have to pay, and this deters a certain class of attorneys from commencing these suits.

The increase in suits, and threatened suits, has been very marked, not only in California, but, as I am informed, in other states in the union.

The spreading of the idea that medicine and

surgery is unnecessary in treating the sick and afflicted, as taught by the Christian Science Church and practitioners of special methods, faulty diagnosis by regular physicians and surgeons followed by a Christian Science cure of a disease that did not exist, and wide spreading reports of such cases, in addition to the fact that perhaps a majority of the cases of sickness would be cured by nature, without the intervention of medicine or surgery, all combine in spreading the idea that the treatment by regular practitioners is accompanied by risk and is besides unnecessary.

Therefore when anything goes amiss in the treatment by doctors of the regular school, it is a signal for an action for damages.

Now that the lawyers must necessarily cease to search for damage cases for personal injuries, because of the employers' liability act, they will probably devote more time to developing malpractice suits where operations are performed arising from accidents.

Six out of the fifteen cases reported by me were cases of fracture. When called to attend a case of fracture, the doctor should be careful to prepare in advance his evidence against any suit which may be subsequently brought against him.

X-ray pictures should be taken if convenient before the setting of the broken bone or bones, but in all cases immediately after the cast or splints are applied. The photographs are to be taken in two positions wherever possible.

Other X-ray pictures should be taken before the cast is removed or immediately afterwards. It is preferable to take a picture before the casts are taken off, and then after a few days, the number of which would be governed by the respective case; another X-ray should be taken showing the condition of the bones.

In setting any bones it is wise to have at least one assistant, and internes and nurses present, and to have the assistant doctor so observe the operation that he can testify to the complete apposition of the bones and the medical skill exhibited in the operation.

I desire to express my appreciation of the courtesy of doctors belonging to the Medical Society, when asked to give expert advice as to certain cases, and also to give expert testimony at the trials.

These good offices are freely tendered, at the expense of time and trouble, and this assistance given in thorough accord with the efforts of the Society assists materially at the trial.

Yours very truly,

W. W. KAUFMAN.

Attorney for Medical Society of the State of California.

ADVERTISING.—The following report of the Advertising Committee was read by the chairman, R. E. Bering, and referred to the same committee:

Mr. President:

I beg leave to submit herewith a report of the advertising committee, the first of its kind ever presented to this Society, and sincerely trust that in the future we may have the support of the members towards securing advertisements for the Journal.

Since this committee was formed in 1910, 72 new advertisements and renewals have been secured, a total of 25 pages.

1910 exceeded 1909 by	\$335.00
1911 exceeded 1910 by	834.00
1912 exceeded 1911 by	701.00
1913 exceeded 1912 by	265.00

The business done in 1910 was \$4764, and that of 1913 was \$6564, showing an increase of \$1800. When you consider that there is practically no expense incurred in securing this business, the net revenue to the Society is more than appears from the report.

We desire to call your attention to the fact

that several of these advertisers have continued their business with us ever since signing their first contract, which certainly proves the Journal gives "value received," or they would not have kept up their business with us for so long a period.

We also desire to call your attention to the fact that we are now carrying the advertisement of the Pioneer Automobile Co., which amounts to \$400 per year, with the understanding that it was to be paid for only after some physician purchased an automobile through the State Society. As the automobiles they handle are of standard make and first class in every particular, here is an opportunity for some member of the State Society who is contemplating the purchase of such a machine to assist the Society to the extent of \$400. All that is necessary for them to do is to notify this committee or Dr. P. M. Jones, your secretary, of such intention and an order will be given by the automobile company on the prospective purchaser for the amount of the advertising. The cost of the machine to the purchaser is absolutely the same. If any member intends buying an automobile he is earnestly requested to make his intention known to this committee, which will help us to secure new business for the Journal.

With a little assistance on the part of the members the advertising pages of the Journal could be double and the income much larger, resulting in smaller dues or increased activities on the part of the Society.

Your committee would suggest to the members that whenever a detail man calls on them in regard to any product they have, the first question they should ask is, "Does your firm advertise in the State Medical Journal? if not, why not?" This inquiry repeated many times would gradually get to the home office and result in new business.

Another suggestion is for the members to please take the time and trouble to let advertisers know they saw their advertisement in the Journal, which was the cause of their making purchase from them.

R. E. BERING.

Committee on Scientific Work reported in the person of the chairman, H. E. Alderson, as follows, which report was referred to the same committee:

Your committee begs to call attention to the fact that it has prepared a scientific program which it feels is equal in value to any ever presented before the California State Medical Society. In accordance with the authority vested in this committee by the Constitution of the Society (Article 6, Section 2), we have assumed complete charge of the program and have appointed certain members of the Society to arrange papers for the special sections. Although the authority of the committee in these matters is perfectly clear, a misunderstanding of the situation has arisen in certain quarters, and for the sake of future harmony and in the interest of the best scientific work, your committee desires, at this time, to emphasize the fact that complete control of the scientific program rests in its hands. We have endeavored to make the program representative and to keep it within due bounds. This has been a most difficult matter. The schedule has been arranged and timed so that that for each half-day session can be followed within the allotted period and ample time will be left for the proper discussion of the papers. It will be agreed that one of the most important features of such meetings is in the discussion of the papers. In the past the programs have been too crowded, the discussions too hurried, unauthorized papers have been crowded in and many members seriously inconvenienced by reason of the fact that papers were not read on scheduled time. This has led to great dissatisfaction and well-merited criticism. We believe that no such criticism can be made of the meetings to be held during these three days.

The committee has had a number of requests to have papers added to the program and merely read by title. We believe this to be a bad practice and contrary to the custom of our State Society and therefore we have refused to authorize such a procedure.

We are pleased to have the California Association for the Study and Prevention of Tuberculosis meet with us this year. All papers that were presented coming within the scope of this work were referred to the chairman of their association, Dr. Robert A. Peers, who has arranged a program of great interest and value.

HARRY E. ALDERSON,

Chairman Committee on Scientific Work.

Committee on Public Policy and Legislation had reported in the person of its chairman at the morning general session; the report was referred to the same committee.

Committee on the Effect of Athletics, etc., reported in writing as follows, the report being referred to the same committee:

Gentlemen—Your committee dealing with the effect of athletics in universities and high schools begs to report that owing to various circumstances, including ill health and preoccupation with unavoidable duties, they are not able to add to information contained in the report of last year.

The committee begs to place itself at the disposal of the Society, equally willing to continue the work during the coming year or make way for others; it is, however, of opinion that the subject in question is too important to be dropped.

Very truly yours,

H. D'ARCY POWER.

UNFINISHED BUSINESS.—Introduced at the last session of 1913; amendment to Article VI, Section 4, of the By-Laws to read as follows:

"The selection of the place of meeting shall be determined by the Council and its announcement followed by the election of officers shall be the first order of business of the House of Delegates at the second evening session of each annual meeting."

On motion duly made, seconded and carried, this amendment was adopted.

NEW BUSINESS.—Amendment to the By-Laws. The following amendment was introduced by the Secretary and under the rules laid over till the following day:

Amend Article X, Section 5, of the By-Laws by striking out the words "prior to the first day of August."

The following communication relating to advertising in the State Journal was read and referred to the same committee:

535 North Dearborn St., Chicago, April 10, 1914.
Dr. Philip Mills Jones, Secretary,

Care of Hotel Potter, Santa Barbara, Cal.

Dear Doctor—If you have a minute can you see a chance during the convention to get a word to the delegates on "Patronizing Advertisers"? If so, urge that all advertisements are guaranteed, clean and good.

Also ask readers when answering advertisements to use the coupon or key numbers, so your Journal will get credit for the inquiries.

Very truly yours,

COOPERATIVE MEDICAL ADVERTISING
BUREAU,

E. W. Mattson.

The following preamble and resolutions were

presented by the Secretary at the request of R. L. Wilbur, and were referred to the same committee:

WHEREAS, The Congress of the United States entrusted to the City of San Francisco and the State of California the task of holding a Universal Exposition of the Arts, Sciences and Industries of the world as a means of celebrating the completion of the Panama Canal, uniting the two great oceans and establishing new routes of commerce; and

WHEREAS, A most important element of the Exposition will be a series of congresses and conventions, which are intended to be the most important the world has ever known; and

WHEREAS, As sanitary science made possible the completion of the Panama Canal, it would be eminently fitting for the medical profession to join with the Exposition in celebrating the canal's completion; and

WHEREAS, At a meeting of the House of Delegates of the American Medical Association, held at Atlantic City in June, 1912, the committee appointed to consider the mode of commemorating the completion of the Panama Canal recommended that a Congress on Tropical Medicine and Hygiene be held in San Francisco in 1915, in connection with meetings of the American Medical Association, of the American Society of Tropical Medicine, of the American Public Health Association and of affiliated organizations; now, therefore, be it

RESOLVED, That the Medical Society of the State of California, in convention assembled, sends greeting to the American Medical Association, the American Society of Tropical Medicine, the American Public Health Association and affiliated bodies, and cordially invites them to arrange for their 1915 sessions in San Francisco at the time of the Exposition; be it further

RESOLVED, That the American Medical Association be urged to carry out the spirit of the report submitted by the Committee on Mode of Commemorating the Completion of the Panama Canal and arrange, in affiliation with other bodies, for a Congress on Tropical Medicine and Hygiene, to be held in San Francisco in 1915; be it further

RESOLVED, That the Bureau of Conventions and Societies of the Exposition, in cooperation with the officers of the American Medical Association, the American Society of Tropical Medicine, the American Public Health Association and affiliated bodies, be urged to set aside a distinctive two weeks' period for meetings of the congress and organizing bodies, to the end that all members of the medical profession, at the expense of one trip to San Francisco, may attend meetings of the associations of which they are members, and also take part in the proceedings of the congress; be it further

RESOLVED, That telegrams be sent to the officers of these several organizations, inviting them to hold their 1915 meetings in San Francisco and arrange for the proposed Congress on Tropical Medicine and Hygiene; be it further

RESOLVED, That copies of these resolutions be forwarded to the officers of the American Medical Association, the American Society of Tropical Medicine, the American Public Health Association and affiliated bodies.

HOWARD MORROW,
A. W. MEYERS,
WILLIAM PALMER LUCAS,
HERBERT C. MOFFITT,
W. OPHULS,
R. L. WILBUR,
FREDERICK P. GAY,
Chairman,

Special Program Committee for Medical Societies representing the American Association for the Advancement of Science.

The following communication was read by the Secretary and referred to the same committee:

April 3, 1914.

We have been advised that there is a Senate amendment to the Army Bill as follows: To transfer the Library of the Surgeon-General's office to the Library of Congress, and to stop the publication of the Index Medicus and Index Catalogue. This would be a great calamity not only to the army, but to the entire medical profession, and to the prestige of American medicine abroad, and its passage effect every medical library in the world.

As this bill is in conference, steps must be taken immediately to show plainly the feeling of those of us who are most concerned. Will you not communicate immediately with your Senators and Representatives, preferably by telegraph, or night letter, and if you know any people of influence in legislative circles, get in touch with them. I can imagine no other form of publication, even on the Library of Congress cards, which would be as effectual a reference as the Index Medicus, or in as practical a form; and I am sure all medical libraries who remember the dark years between the old and new series of the Index Medicus will do everything in their power to prevent these publications being stopped. Immediate action is necessary.

Very truly yours,
M. C. NOYES.

Manager Medical Library Association.

The following letter from the Council on Health and Public Instruction of the American Medical Association was read and referred to the same committee:

At the meeting of the Council on Health and Public Instruction held Saturday, November 1, the council instructed the secretary to ask each State Association, which has not already done so, to appoint a Committee on Health and Public Instruction, or to notify existing committees of the State Society through which the work of the council in each state may be carried on.

The secretary was also instructed to request state associations in organizing such committees to consider the advisability of providing for the appointment of one woman member, in order that the Committee on Public Health Education Among Women might have a representative on each state committee through which to carry on its work.

In some of the states provisions for such a committee have already been made; in others the work is carried on by a standing committee of the state association under some other name, or by a committee having several functions.

The request of the council that state associations give this matter careful consideration, is due to the desire of the council to carry on its work in each state as far as possible through the officers and committees of the state association.

If you will kindly bring this matter to the attention of your state association for such consideration as it may receive, it will be of great assistance to the council in developing its work. I shall be glad to give you any further details regarding the work and plans of the council at any time.

Yours very truly,

FREDERICK R. GREEN,
Secretary Council on Health and Public Instruction.

The following resolutions were introduced by George H. Kress:

Resolved, By the House of Delegates of the Medical Society of the State of California at the 44th annual session, that the Program Committee be enlarged by adding thereto, as ex-officio members, the secretaries of the different scientific sec-

tions of the Society. Referred to the same committee.

Resolved, That the Council be requested to appropriate the sum of \$50 for the legitimate expenses of each section. Referred to the same committee.

Resolved, That the By-Laws of the Eye, Ear, Nose and Throat Section as herewith presented be approved. Referred to the same committee.

Constitution.

Article 1. Name. The name of this Section shall be The Eye, Ear, Nose and Throat Section of the Medical Society of the State of California.

Article 2. Object. The object of this Section shall be to promote and advance the science and art of medicine appertaining to the eye, ear, nose and throat; and to encourage the study of the relationship of these specialties to surgery, general medicine and hygiene.

Article 3. Membership. Any member of the Medical Society of the State of California, who is in good standing, and whose practice is limited to diseases of the eye, ear, nose and throat, may, on the recommendation of two members and by unanimous vote of the members present at an annual meeting, be elected a member.

Article 4. Officers. The officers of this Section shall be a chairman, vice-chairman and secretary, who shall be elected annually at a regular meeting.

Nominations for officers of the Section shall be presented to the Section by a nominating committee of three members, who shall be appointed by the chairman. The nominations shall be made and election held at each annual meeting. A majority of the votes cast by the members at an annual meeting shall constitute an election.

Article 5. Amendments. This Constitution may be amended by a two-thirds vote of the members present at any annual meeting, notice of proposed amendment having been given at the previous annual meeting and due notice of which shall have been mailed each member ten (10) days prior to the annual meeting.

By-Laws.

Article 1. Annual Meeting. The annual meeting shall be held each year at the same time and place as the Medical Society of the State of California.

Article 2. Papers. The titles of all papers to be read at any annual meeting shall be in the hands of the Secretary not later than four weeks before the meeting.

The reading of each paper shall not occupy more than fifteen minutes.

The discussion shall be limited to five minutes to each speaker and no one can speak more than once on each paper.

No member shall read a paper that has been previously read or published.

All papers read before this section shall immediately become the property of the Medical Society of the State of California and shall be published in the California State Journal of Medicine when edited and approved by its Publication Committee.

Each paper must be read in person by its author, unless good and valid reasons for his absence can be shown, when by unanimous vote of the members of the Section present, the paper may be read by proxy.

Article 3. Elections. The nomination and election of officers shall occur at the annual meeting.

Article 4. Duties of Officers, Etc. The chairman shall preside at all meetings of the Section and act as the executive officer of the Section.

The Vice Chairman. The Vice Chairman, in the absence of the Chairman, shall act in his stead.

The Secretary. The Secretary shall keep a record of the Section meetings. He shall assist the Chairman in preparing the annual scientific pro-

gram and attend to its transmission to the editor of the California State Journal of Medicine in time for its proper publication.

Article 5. Only members of the Section in good standing are eligible to hold office and to vote on matters properly belonging to the Section.

The Committees. The Chairman shall appoint the following committees, each to consist of three members:

1. The Membership Committee.
2. The Committee on Arrangements.
3. The Committee on Exhibits.

The duties of the Membership Committee shall be to nominate a chairman, vice chairman and secretary to serve as officers of the Section for the ensuing year.

Additional nominations for these officers may also be made from the floor if so desired.

Article 6. Order of Business.

1. Meeting called to order.
2. Announcements.
3. Reading of minutes.
4. Report of Secretary.
5. Report of Committees:
 1. Membership.
 2. Arrangements.
 3. Exhibits.
6. Address of President.
7. Reading of papers.
8. Unfinished business.
9. New business.
10. Election of officers.

Article 7. Amendments. The By-Laws may be amended at any annual meeting by a two-thirds vote of the members present, notice of the proposed amendment having been given at the previous annual meeting.

Resolved, That the special committee on conservation of vision appointed last year be discharged, with the thanks of the house for their services, and that a new special committee be appointed, to be one and the same with the subcommittee of the American Medical Association on conservation of vision. Referred to the same committee.

Also the following preamble and resolution was introduced by George H. Kress and referred to the same committee:

Whereas, Properly trained practitioners of the healing art in California are absolutely necessary if the health and lives of the people of California are to be properly conserved; and

Whereas, The more than two thousand members of the Medical Society of the State of California and its constituent county units hold to the belief that a properly trained practitioner of the healing art should in this day and generation have at least a regular four-year high school education as a preliminary training and at least four years of professional education and training; and

Whereas, The present law regulating the practice of the healing art in California, as administered by a conjoint board made up of representatives of widely different schools or systems of the healing art makes impossible the maintenance of such standards as the great mass of the ethical practitioners of medicine and surgery hold to be essential to the conservation of the health and lives of our citizens; therefore, be it

Resolved, That the House of Delegates of the Medical Society of the State of California in 44th annual session assembled at Santa Barbara, does

herewith reaffirm its belief that any state licensure of practitioners of the healing art having in this day and generation a training less than a high school course and four years of professional training, as being inimical to the public health of the people of the state; and be it further

Resolved, That the House of Delegates of the Medical Society of the State of California does herewith authorize the appointment of a special committee of five to draft a bill for the licensure of practitioners of medicine and surgery in California, this law to be administered by a single board of non-sectarian or regular practitioners of medicine and surgery, and this draft of said bill to be submitted to the Board of Councilors of this Society and then through the said Board of Councilors and special committee to be introduced into the next session of the California State Legislature, with the endorsement of this Society and its request for its passage for the State Legislature.

Referred to the same committee.

Resolution introduced by Harry E. Alderson and referred to the same committee:

Resolved, That Dr. George Tucker and his confreres who spent much valuable time and money in their efforts before the Legislature last year in the direction of having a good medical practice act framed and passed, be reimbursed by this Society in the amounts which they spent in their good work.

There being no other new business introduced, the minutes of this session were then read and corrected and approved as corrected (and as hereinabove printed) and the House adjourned to meet at 8 p. m., April 15th, 1914.

SECOND SESSION, APRIL 15TH, 1914. 8:35 P. M.

The House was called to order by the President and the roll call disclosed the presence of 71 delegates; subsequently others came in, making the number 91. The President declared a quorum present and the House ready for business.

The Secretary stated that it had reached his attention that some persons were uneasy because the meeting had convened on the second Tuesday of the month and not the third Tuesday as specified in the By-Laws. He explained that when the mistake in the date was discovered, the matter was referred to the attorney for the Society, who said that it did not make any difference, and in order to avoid confusion it was allowed to stand as announced.

PLACE OF MEETING.—The Chairman of the Council, C. G. Kenyon, announced that the Council had selected San Francisco as the place for the next annual session.

ELECTION OF OFFICERS.

PRESIDENT.—Harry M. Sherman, of San Francisco, was nominated by Dudley Tait, and there being no other nominations, it was moved, seconded and carried, that the nominations close and the Secretary cast the ballot of the House, which was done, and the President announced that Harry M. Sherman had been elected President for the ensuing year.

FIRST VICE-PRESIDENT.—George A. Hare, of Fresno, was nominated and there being no other nominations, the usual motion prevailed.

SECOND VICE-PRESIDENT.—Rexwald Brown, of Santa Barbara, was nominated and there being no other nominations, the usual motion prevailed.

SECRETARY.—Philip Mills Jones was nominated by George Kress and seconded by Ralph Campbell; George Tucker, of Riverside, was nominated by W. B. Coffey. The President appointed J. H. Parkinson, H. Bert. Ellis and René Bine as tellers. The ballot resulted in the election of Jones. The President declared Jones elected Secretary. W. B. Coffey moved that the election be made unanimous, which motion was seconded and carried.

COUNCILORS.—Fifth District, vice A. E. Osborne, term expired, A. C. A. Jayet was duly elected.

Seventh District, vice E. N. Ewer, term expired; Ewer was elected to succeed himself.

Ninth District. A. W. Hoisholt and John H. Kuser were nominated and the ballot resulted in the election of Hoisholt. Hoisholt was declared elected by the President.

At Large. René Bine and P. K. Brown were nominated and the ballot resulted in the election of Bine. The President declared Bine elected.

COMMITTEE ON SCIENTIFIC WORK.—H. E. Alderson was elected to succeed himself.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.—T. C. Edwards and J. H. Parkinson were elected to succeed T. C. Edwards and H. G. Thomas.

COMMITTEE ON ARRANGEMENTS.—P. K. Brown, E. C. Fleishner and H. B. Kugeler were elected.

COMMITTEE ON PUBLIC HEALTH.—C. C. Browning, Jno. C. King, G. F. Broderick, N. K. Foster and L. M. Powers were elected.

DELEGATE to the A. M. A. for Two Years.—H. Bert. Ellis was elected.

ALTERNATES to the A. M. A.—H. H. Horn, H. R. Oliver and V. G. Strong were elected.

Moved, seconded and carried that the thanks of the House of Delegates be extended to Mr. Potter and the management of the Hotel Potter for the courtesy and enthusiasm with which they had made the meeting at Santa Barbara pleasant for all the members present.

REPORT OF THE REFERENCE COMMITTEE.

The report was first read in full by the Chairman of the Committee, George Kress, and it was then moved, seconded and carried to consider the report section by section.

Moved by Graves, seconded and carried, that the last section, No. 22, dealing with industrial insurance, be considered first for the reason that some of those present wished to discuss it and to leave on a train departing about 11:30.

Graves, in discussing Section 22 of the report, introduced the following as a substitute for the committee recommendation:

Resolved, That the Medical Society of the State of California favors an amendment to the present Industrial Insurance Act, that will provide for the payment of a sum equal to the present indemnity plus the cost to the state of surgical

attendance and hospital care. All money to be paid directly to the injured individual, who shall select his own medical attendant. No claims for indemnity will be honored unless accompanied by the certificate of the attending surgeon, who must be a duly licensed medical graduate of this state.

This resolution was declared out of order and deferred to new business.

After considerable discussion, a vote was taken on the adoption of Section 22 as presented (and as hereinafter published), and the motion to adopt was carried by a large majority.

Wallace I. Terry moved a reconsideration of the vote to adopt. Asked by the President if he had voted in favor of the passage of motion, he replied that he had. The President then put the motion to reconsider to the House and it was defeated by a large majority.

It was then moved to return to the regular order of the recommendations in the report and proceed to their consideration. This was carried and the various sections adopted as presented and with minor modifications which were accepted as made and are included in the report as it appears below.

The report as a whole was then, on motion duly made, seconded and carried, adopted.

Your Reference Committee on New Business begs leave to respectfully report to the House of Delegates as follows:

1. We believe the House of Delegates may well congratulate our county units on the splendid work and progress of the last year.

(Adopted.)

2. We recommend the adoption of the amendment proposed by the Eye, Ear, Nose and Throat Section to make Section 2 of Article VI of the By-Laws to read as follows:

"The Committee on Scientific Work shall consist of seven members, of which number the State Society Secretary and the secretaries of the various scientific sections, shall be ex-officio members, and the other four" and so on as at present to the end of the Section (see page 94 of the October, 1913, State Medical Directory).

(Adopted.)

3. We recommend that the House of Delegates emphasize the fact that the Committee on Scientific Work has full control of the scientific program of the Society.

(Adopted.)

4. We recommend that the House of Delegates instruct the Committee on Scientific Work:

A. To refuse a place on the program to essayists who wish to read their papers by title; and

B. To refuse a place on the program to essayists who fail to submit in proper time for publication in the program, as provided for last year, a synopsis of the contents of their papers.

(Adopted.)

5. We recommend that the Constitution and By-Laws of the Eye, Ear, Nose and Throat Sec-

tion, as submitted by that Section, receive the ratification of the House of Delegates.

(Adopted.)

6. We recommend that the Special Committee on Conservation of Vision appointed last year, be discharged; and that a new Special Committee, to be one and the same with that appointed by the A. M. A. for this same work, be authorized.

(Adopted.)

7. We recommend that the Amendment to the By-Laws, relative to associate members, be adopted as herewith amended and submitted.

(Adopted.)

Amendment to the By-Laws: Amend Article 8 of the By-Laws by adding a new section to be known as Section 20, to read as follows:

"Any County Society may in its discretion create a class of associate members; physicians not licensed to practice in this state but connected with any of the state or federal service or engaged in research, scientific or teaching work, shall be eligible to associate membership. Persons engaged professionally in branches of science allied to medicine but not holding the degree of Doctor of Medicine may be elected to associate membership.

"Associate members shall be reported by County Society secretaries."

(Adopted.)

8. We believe that the House of Delegates should again urge the members of our Society to give as full support as is within their power to those firms who advertise in the JOURNAL and Directory.

(Adopted.)

9. We recommend that the Special "Committee for the Study of the Effect of Athletics in Universities," etc., be continued.

(Adopted.)

10. We recommend that a "Special Committee on Health and Public Instruction," with one woman member thereon, be authorized, as per the request of the Council on Health and Public Instruction of the A. M. A.

(Adopted.)

11. We recommend that this House of Delegates urge all county units, and the members thereof, to use all possible effort and influence with our national congressmen and senators, to impress upon those legislators that we would regard it a distinct public health calamity if the Library of the Surgeon-General were to be transferred to the Library of Congress; or if the publication of the Index Medicus and Index Catalogue were to be discontinued or materially abbreviated.

(Adopted.)

12. We recommend that the House of Delegates refer to the Board of Councilors, with its approval, the request of the Eye, Ear, Nose and Throat Section, that its officers be permitted to expend not to exceed Fifty Dollars (\$50.00) annually for the legitimate expenses of that section.

(Adopted.)

13. We recommend that the House of Delegates reiterate the importance of our members in-

variably having X-ray photographs made of all fractures, both before and after treatment; and further, that notice be given at this meeting, that after January 1, 1915, our State Society will reserve the right, through its Council, to withhold malpractice defense from such members treating fractures, who do not give satisfactory reasons to the Council for not having had such X-ray photographs taken.

(Adopted.)

14. We recommend that the House of Delegates refer to the Council the matter of paying the deficit incurred by Dr. George Tucker in his work before the last session of the legislature.

(Adopted.)

15. We recommend that the resolutions advocating a separate board of medical examiners for regular or non-sectarian practitioners, be referred to the Council for careful consideration and such action as in its judgment seems best.

(Adopted.)

16. We recommend the adoption of the resolutions in regard to invitations to hold meetings in 1915 in San Francisco, of the A. M. A. and various other national medical and scientific societies, etc., as presented at the first session, Tuesday night.

(Adopted.)

17. We recommend that the report of the Committee on Public Policy and Legislation be referred to the Publication Committee.

(Adopted.)

18. We recommend that the House of Delegates make the State Society Assessment Six Dollars (\$6.00) per year for every member of the constituent county units for 1915.

(Adopted.)

19. We recommend that the House of Delegates authorize the Council to withdraw malpractice defense when such malpractice suits in its judgment have arisen in the course of what is "ordinarily known" as "hospital association, or lodge or contract practice" work.

(Adopted.)

20. We suggest for commendation by the House of Delegates, our representatives who have so faithfully looked after our medical defense work and the management of our STATE JOURNAL and other Society activities.

(Adopted.)

21. *President's Address.*—

A. We recommend that the House of Delegates heartily concur in the viewpoint of the President, that the organized profession of medicine and surgery of California, as represented in our State Medical Society, is in full accord with the law enacted by our last legislature designed to give accident insurance protection to those of our citizens who have been at a disadvantage in procuring such protection themselves.

B. We recommend that the House of Delegates go on record as regarding as unprofessional

conduct any co-operation or action of any members who become parties to any proposition to charge other members of this Society or profession, a commission on accident insurance work performed for the State Industrial Commission, or a private accident insurance company or companies.

C. We recommend that the House of Delegates should go on record as affirming its belief in the principle that citizens coming under the application of our state insurance act, should have the privilege, within certain restrictions, of choosing their own physician. Also, that in cases of dispute over fees, a court of arbitration should be provided for.

D. We believe the suggestion that was made for the appointment by county units of secret membership committees, with the right of appeal by the applicant to Board of Trustees or similar authority, before any public announcement of such rejection be made, is worthy of consideration by such county medical units as feel that the open system of election works unfair hardship on the personnel of a membership committee, or works to the detriment of the county unit membership standards as a whole.

E. We believe the House of Delegates should concur in the viewpoint that it is a rational function for the state to maintain a close connection with the maintenance of high standards of medical education, and with all agencies and work intended for the betterment of the public health.

F. We believe the House of Delegates should go on record and urge those upon whom devolves the making of our laws, that a constructive program of large scope, for the solution of the tuberculosis problem of our state, be inaugurated.

G. We concur in urging our county units to make an aggressive campaign to place on their rosters of membership the names of all eligible practitioners of non-sectarian medicine who are not as yet so enrolled in their respective communities.

H. We do not believe that it would be a wise plan to divorce the business and editorial management of our STATE JOURNAL and State Society, since it would seem that the work can be better centralized and supervised under the joint management of the Secretary-Editor, and Board of Councilors, as at present.

(Adopted.)

22. We recommend for adoption and ratification by the House of Delegates of the recommendations made by the Council relative to accident insurance, and the relation of our members and Society and county units thereto, as given on pages 6 to 7 inclusive, of attached report (beginning on page 6 with the line "In the following statement," etc., and ending on page 7 with the 21st line reading "subject to discipline," etc.)

"A. Note. In the following statement the Industrial Commission is considered as one of the companies, for it is doing the same sort of work and on the same basis and is agreeable to the general conditions as outlined.

"B. *Contracts:* No contracts at flat, fixed fees

for all work are to be made and those now existing are to terminate at the earliest possible date.

"C. *Fee Schedule*: The fee schedule which has been prepared as heretofore indicated and is herewith presented to you, is recommended for the approval of the Medical Society of the State of California and of its various county units, as a schedule of the minimum fees to be charged for the services indicated in the schedule in the treatment of persons who may be injured as specified in the law. Additional compensation will be allowed in unusual cases for unusual services on proper representation.

"D. *Choice of Physician*: The employer (or the company, if the employer is insured) is to have the right to a free choice of physician and such selections are to be made from lists of names furnished by the insurance companies, these lists of names to be the lists of members of the several county medical societies which collectively compose the Medical Society of the State of California, but no member may be compelled to do the work if he does not wish to. Provided, that in counties where there is no county medical society, or in special cases where the employer may desire to secure the services of some physician who is not a member of his county medical society, he reserves the right to do so; also provided, that in the larger centers the societies are to prepare lists of names of members who are willing to do the work and to arrange so that the services of some of them may be secured at any time, by means of a telephone exchange or some other plan by which their whereabouts may at any time be ascertained; and also provided that the companies are to be permitted to advise their policy holders that certain physicians have, in the past, done work for them satisfactorily. It is understood that an insurance company may have a regularly appointed medical referee in any given locality.

"E. *Adjustment of Fees*: In case a bill rendered by a member is regarded as excessive by the employer (or company) it shall be submitted to the county medical society for scrutiny and adjustment, and if there be still failure to agree, it may be submitted to the Council of the State Society or to the Industrial Commission.

"F. *County Units and Professional Conduct*: In order to carry out the provisions of this plan, it will be necessary for each county unit to approve the schedule—in so far as it applies to the work indicated and to persons whose income does not exceed the maximum indicated in the law. Charges in excess of the proper ones, or bills unduly padded by fictitious or unnecessary visits, shall be deemed unprofessional conduct and subject to discipline by suspension or expulsion."

(Adopted.)

Respectfully submitted,

G. A. HARE, Fresno;

RENE BINE, San Francisco;

GEORGE H. KLEISS, Chairman, Los Angeles.

(Adopted as a whole.)

UNFINISHED BUSINESS.—The amendment to the By-Laws introduced the previous night, amending Article X, Section 5, of the By-Laws by

striking out the words "prior to the first day of August," came up for final action and on motion duly made, seconded and carried, the amendment was adopted.

NEW BUSINESS.—The resolution introduced previously during the present session by Graves was called up under new business and on motion duly made, seconded and carried, was referred to the Council for consideration.

STENOGRAPHERS.—Moved by Pottenger, seconded and carried, that stenographers be employed to transcribe the discussions at future meetings of the Society.

MINUTES.—There being no further business, and it being reported to the House that the President-elect was ill and could not come to the meeting room to be presented to the House, the minutes were read and approved as read and as herein printed.

The House of Delegates then adjourned sine die.

PHILIP MILLS JONES, Secretary.

REPORT OF THE COMMITTEE ON PUBLIC HEALTH.

The Committee on Public Health, while it has nothing essentially new to report or suggest, desires to call attention to certain work which has been inaugurated and recommend continued efforts for greater efficiency in public health work.

We recommend the endorsement of the following recommendation from Dr. Donald H. Currie, Secretary of the State Board of Health:

At the present writing, it appears to me that one of the greatest needs this state has to complete the machinery, whereby its public health is preserved, is to have either the county or district health officer appointed by this board on competitive examination (which examination should be given by the board and not the Civil Service Commission) to devote their whole time to public health work within their county or district under the sole authority and direction of this board, and to receive for such services from the county or district in which they are serving, an adequate compensation. That the officer be obliged to attend a yearly health officers' conference and that the county, city or district pay the traveling expenses of such attendance.

Since the last meeting of the Society a Bureau of Tuberculosis has been established, the executive officer being an assistant to the Secretary of the State Board of Health, whose duties are to supervise and co-ordinate the efforts being made to control tuberculosis in this state. Dr. Burt F. Howard has been appointed to this position. He is expected to make report of the progress of his work during this meeting.

In this connection we are pleased to report that the United States Public Health Service has de-

tailed Surgeon P. M. Carrington to make investigation of the tuberculosis problem in California.

The investigation has for its object the following:

1. To ascertain the extent and direction of the migration of tuberculous persons from other states into California south of San Francisco.

2. The effects of travel on tuberculous persons themselves.

3. The bearing of such migration on the health of other travelers and on employees of common carriers.

4. The conditions under which tuberculous persons live in localities resorted to for changes of climate, and the effects of these conditions on the progress of their disease.

5. The bearing of the presence of these persons on the health, social and economic status of the communities to which they have migrated.

Doctor Carrington's report will be awaited with interest.

Efforts for improvement of sanitary and physical conditions of children in our schools continue, but much is to be done and the influence of the members of this Society should be given to this important work. School houses are constantly being built which are poorly ventilated.

Everyone recognizes that physical defects such as enlarged and diseased tonsils and adenoids, defective vision, decayed teeth and malnutrition are frightful drains on the vital forces of children, and that the victims are in poor condition to resist disease and compete for a livelihood. That these troubles are numerous, extended examinations all over the world prove. A conservative estimate is 60 per cent.

Careful health inspection of schools with proper follow-up work in the family will do much to remedy these defects. These are proven facts, and what is more logical than for the state to insist that careful examinations be made and parents informed of bad conditions and influenced when possible to have the necessary work done. The next generation will be stronger and have less defects if this is done, and we are sure it is the best battleground against tuberculosis and other diseases of low vitality. We would like to see a state law requiring an examination of all school children each year.

The following from Long Beach, Oakland and Los Angeles indicates what is being done in this regard in these cities:

The Long Beach Board of Education has established a Department of Child Study and School Sanitation, and has placed it in charge of Dr. Ernest B. Hoag. The object of this new department is to aid the school child in his mental and physical development so that he may make the best possible use of the educational opportunities which our schools afford.

This department tests pupils whose mentalities differ from the normal with the object in view of taking them from the regular classrooms and giving them such training as will enable them to make the most out of the time which is spent in the public schools.

Doctor Hoag gives half of his time at a salary of \$200.00 per month.

REPORT OF OAKLAND SCHOOLS,

Dr. N. K. Foster, Director Department of Health and Development.

Percentage of Defective Children.

	Percentage of defectives in all examined.	Number examined in each Grade.	Number defective in each grade.	Average defects in all.	Average defects among defectives.
All Examined...	69.5	17945			
First Grade....	70	3644	2564	1.5	2.1
Second Grade...	75	2319	1751	1.5	2.
Third Grade....	76	2532	1928	1.5	2.
Fourth Grade...	72	2603	1897	1.3	1.9
Fifth Grade....	70	2356	1654	1.2	1.8
Sixth Grade....	64	2051	1322	1.1	1.7
Seventh Grade..	64	1227	741	.9	1.5
Eighth Grade...	50	1213	606	.7	1.5

Percentage of Different Defects.

Number with severe malnutrition.....	828—4.6%
Number with defective hearing.....	1156—6.4%
Number with adenoids.....	1523—8.4%
Number with enlarged glands.....	1577—8.7%
Number with defective nasal breathing..	2485—13.8%
Number with defective vision.....	3391—18.7%
Number with defective tonsils.....	5044—28.4%
Number with defective teeth.....	7582—42.2%

Department of Health Los Angeles Public Schools.

Total number of pupils enrolled, 68,400.

Extracts from Mr. C. H. Leslie's quarterly reports, December 9th, 1912, and March 7th, 1913, the latest available reports:

Total number of examinations.....	9,861
(About 29,583 for 9 months.)	
Total number with defective eyesight.....	1,236
Total number with defective hearing.....	319
Total number with defective teeth sets.....	2,586
Total number with defective jaws.....	245
Total number with defective adenoids.....	837
Total number with defective tonsils.....	924
Total number with defective heart, function....	221
Total number with defective heart, organic....	172
Total number with anaemia.....	476
Total number with poor lung action.....	364
Total number with tuberculosis, incipient.....	21
Total number with spinal curvature.....	72
Total number with nerve defects.....	264
Total number with epilepsy.....	4
Total number with defective chorea.....	3
Total number with defective speech.....	62
Total number with mal-nutrition.....	94
Total number with accidents.....	12
Total number with pediculosis.....	64
Home visits by nurse.....	1,527

Clinics for treating the above cases, when requested—Dental, Eye, Ear, Tonsils and Osteopathic—were maintained.

It seems impossible from these figures to judge the percentages of those examined that have defects for the reason that in many instances defective teeth may be associated with defective eyesight, hearing, adenoids, tonsils, etc.

It would not be just, even though accurate information could be obtained, regarding the percentage of defects among all those examined to conclude that the same percentage would exist throughout the entire school department for the reason that usually only those with pronounced defects or those children with irregularities of any kind which might lead to the detection of defects, are those referred usually to the department for examination.

The health department maintains a staff as follows:

Eight physicians, five of whom are on full time

at \$2,000.00 a year; the others all half-time, three hours a day, at \$1,200.00 a year. Eight nurses full time. One clerk. Some voluntary assistance has been given by outside physicians.

The total expense last year in maintaining this department was \$27,343.69; of which \$25,325.04 went toward salaries and supervision. \$2,018.65 went toward equipment and supplies.

Department of Physical Education.

The Department of Physical Education, which is under the supervision of Dr. Everett C. Beach, maintains 68 playgrounds in connection with the school buildings, thoroughly equipped, open three hours a day and under the supervision of trained play leaders. The average daily attendance on each of these playgrounds is 80 (5440 daily average). Daily instruction is given to the children in every room in the city, except when the negligence of the teacher interferes, in personal hygiene, gymnastics, exercises for general corrective purposes; plays and games, and exercises in motor-rhythm.

The Department maintains a director and six assistant directors. The hygienic conditions of rooms and grounds are also cared for. The cost of maintaining this department, during the past year was \$43,352.65, of which \$20,049.05 was devoted to supervision and instruction, salaries, etc. \$23,303.60 was devoted toward supplies and equipment.

In addition to these two departments the Parent Teachers' Association maintained a clinic at a total cost of \$4,031.83 of which \$3,756.90 was devoted to salaries and \$272.93 for supplies. This money was appropriated from the school fund.

CHAS. C. BROWNING,
R. G. BRODERICK,
W. F. SNOW,
N. K. FOSTER,
JNO. C. KING,

Committee.

CONCERNING UNUNITED FRACTURES.*

By JAMES T. WATKINS, M. D., San Francisco
Polyclinic.

(Continued from page 201, May issue.)

In spite of the quotation from Dr. Murphy, I am sure I saw ununited fractures 25 years ago; I think they probably occurred as frequently then as now. The human race has not in this little quarter of a century changed an appreciable amount, but the methods of taking care of fractures have changed and efforts are made to get union in cases which would have been abandoned and forgotten 25 years ago. These efforts have called into the hospitals for treatment people who formerly would have made no effort for relief. For instance, I operated a couple of years ago at the University Hospital on a man who had had an ununited fracture of the tibia and fibula for nine years. During that time he had been in that same hospital for another condition, but could not then wait long enough to have an operation done. When the opportunity occurred he returned, and an operation with the use of a Lane plate got union. Twenty-five years ago this man would have continued content with his crutches and his non-union, and so would not have been known about or counted.

Dr. L. Eloesser: This subject of delayed union

interests me very much. I can not look back upon 25 years of surgery, but it seems to me that even of late non-union has increased a good deal. I know that I used to see it rarely in Germany, but now with certain fractures I am in constant fear of non-union, although I have used no different methods on the whole to those I used abroad. I have been treating most fractures of the lower extremity with methods of traction, but have recently seen so many cases of non-union that I begin to doubt the efficiency of a method of which I was a most enthusiastic advocate. Whether it is the method alone that is at fault I do not know. It seems to me that slow union is also common in the other services at the City and County Hospital, where other means of treatment are used. Opinions as to treatment disagree so utterly that it is difficult to know what to do. We have Lucas Champonierre, who advises complete disregard of immobilization on the one hand, and on the other Codivilla, who advocates absolute fixation. The traction method allows some degree of motion, and the fragments are always moved considerably during inspections of the fracture and changes of dressing, yet in the last year or so it seems to me that I have seen cases kept perfectly immobile in plaster casts that consolidated more rapidly than those where some motion was allowed. I am at sea, and experiences of the last few years at the City and County Hospital have made me begin to lose confidence in my own powers of clinical observation.

I should like to take exception to some of Dr. Watkins's statements. He says that growth of bone takes place in the direction of least resistance. Is this compatible with Wolff's law, which has taught us that bone is laid down at the site of greatest functional demand? Furthermore, he has asserted that bone is not regenerated except from periosteum. Leaving Macewen's theories quite aside, this I think, is an axiom to which few will agree. We see evidences of endosteal ossification, of bone regeneration from the osteoblasts of the marrow in every fracture.

Dr. Sherman has said that the frequency of non-union in fractures of the lower third of the tibia and the humerus is due to atrophy of the lower fragment, the bone being cut off from nutrition because it is cut off from the blood-supply of the nutrient artery, which enters above the site of fracture. It does not seem to me that this explanation is sufficient; I think that I can show X-ray plates bearing on this point. (Demonstration.) Although I concede in answer to Dr. Sherman's objections that the bone in the lower fragment is somewhat more rarefied than in the upper one, still I do not think that non-union can be due to this alone. We see in these plates all around the upper ends of the lower fragments a shadow that evidences a plentiful periosteal production of bone—and yet this bone-production is limited to an area immediately adjoining the shaft. It does not seem to be able to bridge the gap between the fragments. If the periosteum can throw out bone around the ends of the fragments of the shaft, why can it not throw out bone between them?

* Read before the San Francisco County Medical Society, September 16, 1913.

I do not know; and this brings me to what has seemed the main point of interest in connection with non-union; the cause, the pathogenesis of this condition.

The cause in the great majority of cases is a local one. Here are plates of a man who sustained two fractures, one a Potts's; it consolidated perfectly; one of the tibia and fibula, this one has resisted all efforts to make it unite. This latter fracture occurred a year or two before his admission to the City and County Hospital. It had resisted all remedial measures, operative and non-operative. It had been wired; the position of the fragments was good. I opened the leg to put in a bone-graft, and found that the three wires which encircled the tibia were entirely hidden beneath its surface, and had been covered by a layer of bone $\frac{1}{2}$ mm. thick; a repetition you see, of the Duhamel-MacEwen ring experiment. Now in spite of the power of the tibia in the immediate vicinity of the fracture to proliferate, as evidenced by the overgrowing of the wires by bone, the bony callus was not able to bridge the gap between the fragments. I put in a graft of bone-chips and a shred of periosteum taken from another patient operated at the same time. These also refused the proliferate, and you can see the chips as small opaque shadows in the X-ray plate. They probably lie in little cavities lined with granulation tissue. It is furthermore of interest that this case shows a good periosteal callus formation around the ends of the fragments, but that the callus does not bridge the gap between them.

I have a section here of an ununited fracture of a rib. You see an aseptic necrosis of the cortical substance extending some distance backward from the site of fracture. The lacunae are empty, the bone-cells have not stained; over the end of the fragment, covering the marrow-cavity like a lid of a box is another piece of compact substance, also necrotic, with empty lacunae and unstained bone-cells. In the marrow, however, we see a plentiful production of endogenous callus, with new bone and osteoblastic and osteoid tissue in a state of active proliferation. It is the interposition of this necrotic fragment that confined the callus to the cavity of the marrow, prevented it from bridging the break, and caused non-union? I should not dare answer from this one observation alone; future experiments might shed more light on a subject which seems a fruitful one for investigation.

Dr. C. C. Crane: I am much interested in this very comprehensive paper of Dr. Watkins. I am very sorry to find that such a disparaging verdict has been rendered against the use of plaster of paris because I do not believe that it should be held responsible for these fractures which do not unite in the usual allotted time.

Although many causes for non-union have been mentioned, it seems to me that hardly too much stress can be laid upon the important part that syphilis plays in these troublesome conditions. Surely no great harm can come from the use of mercury and iodide of potash in these obscure conditions even though the Wassermann is negative. Another important item in the treatment of non-union of fractures is the Jones method of flooding and beating. The flooding is comfortable and the beating is much less brutal than it sounds. It has been my privilege to see some very happy results in the use of this method as demonstrated by Dr. Hunkin.

Dr. A. Miles Taylor: It occurs to me, as Mr. Lane has said, that when we get non-union it is

as a rule due to our own fault. In several cases I have had, in which we have used the Lane instruments and plates, and were very careful not to carry infection from the skin or outside, we have never failed to get union. It seems to me that in the cases of non-union referred to, there was either an infection present or it was carried there with the bone grafts.

Dr. J. Rosenstirn: I did not hear the paper, and can only discuss the discussion. I would simply say, in relation to the late Professor Bardenheuer's method of extension, which I saw in Cologne, that I was not so much impressed with it. It does not hold the fragments in strict apposition and that is perhaps the reason why fractures under that treatment do not unite as well as under the plaster of paris bandage. While, theoretically, it may appear that the normal conditions are perhaps better restored, the position is not permanently maintained. I prefer the method that keeps the fragments of bone in a more restful condition than the extension method of Bardenheuer, except for fractures of the carpal and metacarpal bones, where his method of finger extension is preferable.

Dr. Freytag: As to the rarefication of the lower fragment, this is an every-day observation in X-ray work, involving not only the distal fragments of the fractured bone, but in Potts and Colles fractures also the carpus and metacarpus, tarsus and metatarsus respectively.

Dr. Barbat: At what period after fracture do you find this atrophy?

Dr. Freytag: These cases usually do not come back very soon after the fracture occurred. If there is trouble, they usually return in one or two months, and it is an exception in such cases if absorption does not take place.

(Concluded.)

AMERICAN PROCTOLOGIC SOCIETY.

This society will hold its 16th annual meeting at Atlantic City on Monday and Tuesday, June 22 and 23. The President is Dr. Jos. Mathews, of Louisville, and the Secretary is Dr. Alfred J. Zobel, of San Francisco. An excellent program has been arranged.

LASSEN-PLUMAS COUNTIES.

On the evening of March 25th with the help of Dr. Bering, the Lassen-Plumas Counties Medical Society was organized, and adopted the Constitution and By-Laws prepared by the Committee on Organization of the American Medical Association. The following officers were elected: President, Dr. W. E. Dozier of Susanville; Vice-President, Dr. Ernest E. Wilson, Greenville; Secretary-Treasurer, Dr. R. W. T. Garner, Susanville; Delegate, Dr. E. S. Drucks, Susanville; Alternate, Dr. F. J. Davis, Westwood; Board of Censors, three-year term, Dr. F. D. Walsh, Susanville; two-year term, Dr. B. B. Bolton, Edgemont; one-year term, Dr. B. J. Lasswell, Loyalton.

The society will hold meetings quarterly on the 1st Saturday in January, April, July and October. The general election of officers is to be held in October. The membership consists of nine, Drs. W. E. Dozier, Susanville; F. D. Walsh, Susanville; E. S. Drucks, Susanville; R. W. T. Garner, Susanville; B. B. Bolton, Edgemont; F. J. Davis, Westwood; E. E. Wilson, Greenville; M. B. Bolton, Quincy, and B. J. Lasswell, Loyalton.

Dr. Bering read a paper, "The Rational Treatment of Morphine Habituation," before the Society.

The Society expects to increase its membership before the year is up.

R. W. T. GARNER, Sec.-Treas.

REPORT OF THE COMMITTEE ON
PUBLIC POLICY AND LEGISLATION,
BY THE CHAIRMAN, GEORGE E.
TUCKER, M. D., RIVERSIDE.

As early as November, 1912, more than a year ago, the question as to whether the regular medical profession should take any part in the passage of a medical practice act in the 1913 legislature was discussed by certain members of the profession in Southern California.

As a result of these conferences, which were held in Los Angeles, San Bernardino, Redlands and Riverside, it was decided to perfect an organization to be known as The Public Welfare League, and to include in the membership not only physicians, but also interested laymen. Funds were to be raised through the agency of this League and Mr. H. T. Morrow and myself were selected to act as representatives at Sacramento to make an effort to bring about the enactment of a law which would contain provisions looking toward:

First, the retention of the A. M. C. standard in the law to apply to all schools of practice.

Second, high school education as a preliminary requirement for all licentiates to practice the healing art in California, if the A. M. C. standard was lost.

Third, a fair and equitable reciprocity clause.

Fourth, provisions under which the successful prosecution of illegal practitioners and advertising quacks could be carried on.

Fifth, defeating the efforts of the chiropractors, mechanotherapists, and divine healers to obtain recognition and license to practice their respective methods of healing.

With this in mind, Mr. Morrow and I, through the courtesy of the American Medical Association, obtained an analysis of all the state medical laws, endeavored to become familiar with their provisions and if possible to present a measure which would incorporate the sound provisions of these acts and eliminate the weak and undesirable. As a further step to this end we made a study of the Report of the Carnegie Foundation for the Advancement of Teaching, we visited medical societies in Southern California, in Central California, and in Northern California, we presented our ideas, we asked for suggestions.

When we arrived at Sacramento during the opening of the session of the legislature, we thought we knew what the regular medical profession felt would be required to protect the public from an influx of incompetent and designing medical and manipulative practitioners, and not be a hindrance to the obtaining of a license by those qualified to practice the healing art regardless of the length of time that had elapsed between graduation and application for license.

We were not surprised when we learned that representatives of the so-called chiropractors, mechano-therapists, league for medical freedom, league of liberal physicians and healers, osteopaths, homeopaths, eclectics, commercial medical schools or diploma mills, were on the ground prepared to

carry their fight to a successful issue, if money, organization and influence could bring them success.

At no time during the last two months of the session, were there less than twenty lobbyists opposing us and at one time there were as many as thirty-six. To describe the methods which were used by these lobbyists to defeat sane and decent medical legislation would require more time than this Society would care to allow to me for that purpose.

When you stop to consider that several members of the legislature were directly concerned in the outcome of this fight, that the Christian Scientists had representatives on the floor of both houses whose principal concern was to defeat sane medical legislation, that one member of the Assembly was there for no other purpose than to bring about the granting of a license to practice medicine to one of the most notorious fakers in the State of California, that there were men in the legislature who were directly connected with the League for Medical Freedom and openly worked for what that organization represented, while on the other hand, there was perhaps not a member of either branch of this body who was willing to trade his vote on a pet measure to assist in bringing about the enactment of a proper medical practice act, then you can readily understand why failure could justly be predicted and the "I told you so" so often repeated. If we were to obtain a law which was to be protective in its provisions we could only bring it about by being able to show that it was just, that it would not react to the detriment of any qualified practitioner of the healing art, licensed or unlicensed, that it would not create what was so frequently referred to as a "medical trust," and further that we as representatives of the whole people and the regular medical profession, had no selfish motive in giving our efforts to prevent the influx of a herd of incompetent practitioners into the field of the practice of medicine in the State of California.

Four thousand measures or more were presented to the legislature for its consideration. Of this number about forty were concerned with medical practice. To prevent the release of these measures from committee was our first aim. In this we succeeded after weeks of most strenuous work. But one act was released from either committee of the House or Senate with the recommendation "Do Pass," so that the fight narrowed down to the provisions which were to be incorporated in this so-called "joint committee bill."

The committee bill as originally drafted not only met with our approval, but also was passed upon and endorsed by such men as Dr. Dudley Tait of San Francisco, Dr. Wilbur of San Francisco, Dr. Moffitt and representative medical men of legislative experience from Sacramento, Oakland and Los Angeles. In short this measure contained all that we could desire, but did not leave the committee for general consideration. We knew by this action that the elastic A. M. C. standard would never be incorporated in the committee

bill, but might be written in as courses of study required.

If the original committee bill had passed and its provisions enforced by the board, in spite of two or three defects, it would have been a decided advance in the right direction, would have served to protect the interests of the public and would have given us in the future a class of medical practitioners in California of much higher standing, much better training, than has been brought about through the enforcement of the medical practice acts which have been on the statute books since 1901.

Up to April 28, 1913, when this bill was introduced in the Senate and no other measure had been released from committee with a recommendation "Do Pass," your representatives in the lobby of the state legislature had accomplished to the satisfaction not only of themselves but of everyone to whom this measure was presented for consideration, nearly everything that seemed possible, but on April 28th and on May 5th, in spite of our efforts and the influence of the few, yes, very few, members of the medical profession who could be aroused to take some interest in our struggle, certain destructive amendments were made.

We tried industriously to change the schedule of requirements so that applicants for "physician and surgeon certificate" would not be required to have credit for 300 hours of physical therapy, including electro-therapy, X-ray, radiotherapy, and hydrotherapy—a course not offered by any regular medical school in the United States.

This sop to the osteopaths could not be prevented because of their splendid organization and the keen interest shown by the licensed members of their school of practice in the controversy.

The bill as passed in its final form was no more than a travesty of the bill first considered by the committee. Of the one hundred and twenty members of the legislature, I question whether there was more than one, and sometimes I had my doubts regarding this one, who understood the provisions of this act. Every provision in the measure which was worth while was fought for industriously by both Mr. Morrow and myself from early morning of January 1, 1913, to the last of the closing hours of the session. One member dominated the committee and was responsible for the writing in of the "freak" and weak portions of the act.

We found it practically useless to try to convince representatives of the profession of the technical importance of the proper wording of certain clauses in the law. As the measure stands to-day it is subject to interpretation in several sections and I believe one attorney even questions the legality of the title. Half a dozen competent lawyers have had the act before them for consideration and no two have agreed as to the intent of its provisions. At the public hearing before the Governor, in spite of the fact that the osteopaths after the third amendment was made, were the strongest proponents of the bill, and in spite of the fact that the homeopaths were the strongest opponents and in spite of the fact that

the promoters of the commercial diploma mills were opposed to the measure, and the regular profession were indifferent, the homeopaths came out as favoring the bill, the osteopaths opposed and the regulars as usual took no part in the discussion.

The Governor signed the bill and it became a law. September 1st passed and no board was appointed, but later the personnel of the board was announced. A meeting was held and an osteopath was elected president, a homeopath was elected secretary and a representative of the regular profession was shelved as vice-president. A San Francisco homeopath was elected secretary, although the act provided that the office of the board should be in Sacramento.

Politics appears to have played an important part in making the appointments on the board, and it is sad to relate that even the somewhat insignificant office of Inspector for the Board has been buffeted back and forth on the political waves. It is an unusual spectacle to witness the appointment of members of a medical board resting, at least to a great extent, in the hands of Christian Scientists,—but that is the existing condition,—a Los Angeles leader of the present political organization having considerable to say in regard to the composition of the board, and its inspector in this locality. Many of the appointments made on the board could not perhaps be improved upon, but the necessity of such a humble employee as an inspector, being a member of any particular political organization, or being satisfactory to any particular political boss, hardly encourages a feeling that a law will be enforced with the highest degree of efficiency.

What is going to happen in the next year or eighteen months I am unable to predict, but I would not hesitate to venture the opinion that the result of the application of this law will not revert to the benefit of either the unprotected and unsuspecting public, or to the reputable medical profession. The struggle which we made under most adverse conditions was heart-breaking and it should be understood that at the last and closing weeks of the fight your representatives were without funds and to this day are indebted to the extent of several hundred dollars. Mr. Morrow's time and efforts were given gratuitously and he is still out of pocket for some of his expenses. Five members of the profession have advanced sums ranging from \$25 to \$100, in addition to a liberal subscription, men who are unable to sacrifice any money whatever, and the Public Welfare League, through which our funds were raised, is still indebted for stenographic services and other expenses.

If this bill as enacted is not satisfactory and is not to the best interests of the state as a whole, a portion of the blame at least, should rest upon the shoulders of those members of our profession who remained indifferent to the trust which the public have chosen to impose upon them and to whom they look for protection and advice. Matters medical will rest in our hands so long as we seem willing and competent to handle them, but when

we refuse to accept that trust, sooner or later, an uneducated public are going to take matters into their own hands and bring legislation to themselves, which cannot help but prove disastrous and unsatisfactory.

It is not that people are opposed to us and what we represent. The facts are that they do not know and but few are willing to give time and the energy to learn. If the members of the medical profession themselves take no interest in medical legislation, knowing as they do the result for good and for evil which can be brought about through this agency, why should the public take it upon themselves and assume this burden? People who are capable of discriminating and recognizing lack of training can usually protect themselves, but the unsuspecting and misguided public must suffer, not of choice, but through ignorance.

Members of the legislature are not selected because of superior knowledge or ability to draft or judge the merits of laws. Generally speaking their purpose, except in rare instances, is to use their office for personal political gain or for public recognition. Secondly, they must please their constituency if possible. Meritorious measures or provisions are often not adopted because they are such, but because the right influence has been brought to bear in the right way, at the right time, and it is shown that the prime purpose of the legislator is being served if such legislation receives his support.

Our profession can gain little by attacking a popularly elected Governor, the members of the legislature or the political party in power. The proverbial wielding of the hammer, percussing, so-called, may in time assist in making a diagnosis, but only the spondylotherapists resort to its use for curative purposes, and we know with what success.

It is perfectly clear that, unfortunately, medical legislation is, and has been, kicked around the legislature like a football. Matters involving taxation, labor and like questions which command the concentration of the political power which happens to be in the saddle, take practically all of the time and efforts of the legislators. The mere work involved in the reading and attempted comprehension of the bills introduced in each legislature would be too much for men of even greater ability than those who grace or disgrace the legislature, as the case may be. Medical legislation is a subject understood by none and avoided by all except, perhaps, one or two devoted legislators and a few cheap interested and ignorant politicians. Should a measure by any chance be drawn so as to represent all that is best for the public, as well as for the medical profession, those few interested politicians, by crying trust and personal liberty, could at will eliminate all that was good and constructive in the law and perhaps make matters worse than they were. In other words, the few able men in the legislature are deeply engrossed in other subjects which they consider of greater importance. Two or three men devoted to the best interests of the profession and the public do what they

can to stem the tide, but, on the whole, medical legislation is a bone which is thrown out for the cur dogs to fight over.

The remedy is either an administration which will compel the passage of a proper law as an administration measure, or a commission composed of able men from all recognized schools of medicine, which would recommend a bill to the legislature which, while it might not be the ideal hoped for, yet would approach much more closely the standard they are trying to establish. Such a bill would be assured of passage, and while not all that might be desired, would be a hundred per cent. better than any which could be drawn and passed amongst the wranglings of a horde of lobbyists of a legislature considering four thousand bills, and with only the riff-raff to give it earnest and somewhat dishonest consideration.

"THE LOS ANGELES DEATHS FROM INTRASPINAL NEO SALVARSAN INJECTIONS."

By EUGENE S. MAY, M. D., Oakland.

The recent fatalities at Los Angeles following the intraspinal injection of neosalvarsan¹ forcibly call to our attention the fact that intraspinal injection of toxic substances can not be made without grave danger to life. In the Los Angeles cases, neosalvarsan (1-2-3 Mg.) was added to blood serum, the salvarsanized serum was then injected into the lumbar arachnoid space. Eight patients received the injection and died. One patient who lived two weeks received the first and largest dose of the salvarsanized serum. The important question arises: "What caused these deaths?" The method of injection was not that of Swift and Ellis,² which consists of the injection into the lumbar subdural space of serum which has been salvarsanized *in vitro*. This serum is obtained from patients who have had intravenous injections of salvarsan. How effective this treatment will prove, remains to be seen. Its efficacy will depend, of course, upon the amount of arsenic contained. This will probably prove nil, which indeed may prove a safeguard for life. The very fact that there have been few deaths reported following this method of intraspinal therapy goes a long way toward proving that the arsenic content of the serum is low, because the toxic effect of arsenic on the nervous system is well known.

Several theories have been advanced to explain these accidents. A defective ampule or syringe or, that because of chemical changes, the salvarsan itself proved more toxic. In view of the fact that the patient who survived received the first and largest dose, we must look further for a reason for the deaths reported.

To understand the *modus operandi* of the causes which led to the death of these patients, we must take into account not only the intimate anatomic relations existing between the subarachnoid space and central canal of the spinal cord, the ventricular system and vital centers of the brain, but also the physiology of the circulation of the cerebrospinal fluid in the subarachnoid space, spinal cord and ventricles.

Kramer³ in a series of experiments⁴ showed that in young individuals and many adults and in most of the lower animals there is a very intimate connection between the subarachnoid space, the central canal of the spinal cord and the fourth ventricle of the brain. When a sub-arachnoid injection of the methyl blue or dionin black is made in the lumbar region of a living animal certain definite staining reactions occur. The outer surface of the spinal cord is stained for a variable distance upward. The central canal of the cord and the floor of the fourth ventricle, the cerebellum, aqueduct and entire ventricular system is also stained. These experiments prove the connection existing between the subarachnoid space, the central canal of the cord and the ventricular system.

The second series of experiments go to prove the nature of the connection between the subarachnoid space and the central canal of the cord. In three new born children a soluble anilin dye was injected into the substance of the cord in the dorsal region. If the central canal be struck, the dye will run down the central canal until it reaches the conus medullaris and the filum terminale and hereabout will appear as a stained spot on the outside of the cord. Serial sections of such a cord will show that at the point where the dye appears a distinct pore exists. This pore is the connecting link between the subarachnoid space and the central canal of the cord. Further, we know that the central canal of the spinal cord is lined by ciliated columnar epithelium and that the direction of the current in the central canal is upward—that is toward the fourth ventricle—so that it is in this manner that the subarachnoid cerebrospinal fluid of the cord reaches the fourth ventricle and the centers situated there. Quoting from Kramer's paper: "Available literature on the central canal is very limited. All authors agree that it is open in the lower animals and in young children. In the adult the result of investigators varies. Bidder, Wagner, Schroeder v.d. Kolk and Stilling hold that the central canal persists in adults. Kolliker found that not infrequently the canal was obliterated in places, most often the cervical region. Clarke also found the canal frequently blocked. Fromann found the canal open throughout its entire length in three out of twenty-five adult cords examined. It may, however, persist as a canal and this may be the explanation for the nine per 1000 deaths from cocaine lumbar anesthesia. . . . If now, in a given case the pore be patent, or if a needle introduced for the purpose of making an injection should injure the filum and make an artificial opening into the central canal, a direct channel lined with ciliated epithelium would be present which might in a few moments deliver a toxic material injected into the subdural space to the fourth ventricle."

The explanation for the deaths is clear, salvarsan, a toxic substance for the nervous system, was injected into the subarachnoid space. Either through a patent passage leading into the central canal of the cord, or through a false opening in the cord made by the needle, the salvarsan was

delivered directly to the centers in the fourth ventricle. The report does not state whether the deaths resulted from respiratory failure. Such is, however, the case in deaths resulting from attempted cocaine or novocaine intraspinal anesthesia and in deaths resulting from intraspinal administration of Flexner's antimeningitis serum (the tricesol used as a preservative for the serum, being in all probability the toxic agent).⁵

The nervous system is very susceptible to the deleterious action of toxic substances and the Los Angeles deaths following the injection of salvarsan (arsenic) must of necessity call to our attention the dangers incident to intraspinal therapy. These cases should be a warning against indiscriminate intraspinal therapy when the therapeutic agent is toxic in action.

¹ J. A. M. A., Mar. 14, 1914, p. 861.

J. A. M. A., Mar. 21, 1914, pp. 935, 957.

² Swift & Ellis. *Journal Experimental Medicine*, Oct., 1913. Abs. in J. A. M. A., Oct. 25, 1913, "Study of Spriochetidal action of Serum of Patients Treated with Salvarsan."

³ The Circulation of the Cerebro-Spinal Fluid and Its Bearing on the Pathogenesis of Poliomyelitic Disease. *New York Medical Journal*, Mar. 10, 1912. A Possible Source of Danger in the Use of Antimeningitis Serum, J. A. M. A., May 3, 1913.

⁴ It was the author's privilege to assist in these experiments and most of the views expressed in the paper are based on Kramer's research.

⁵ U. S. Public Health Reports—W. H. Frost, Jan. 26, 1912, p. 115. Epidemic Cerebrospinal Meningitis, A. H. Parmelee, J. A. M. A., Mar. 1, 1913, p. 659.

A REVIEW OF THE INTERCRANIAL COMPLICATIONS FOLLOWING ABSCCESS IN THE MIDDLE EAR.*

By ADOLPH BAER, M. D., San Francisco.

The review of a great many cases of intercranial complication shows a history of either an infectious fever, a middle ear abscess, a mastoid suppuration and an intercranial complication, or an attack of tonsillitis or adenoiditis, a middle ear abscess, a mastoid suppuration and an intercranial complication.

The complication may follow an acute middle ear suppuration or a chronic middle ear suppuration. But it seldom occurs during an acute otitis before the beginning of the third week, and seldom in a chronic otitis except during an acute exacerbation. Given a suppurating middle ear (which always means an inflammatory condition of the mastoid cells), the pus and bacteria may develop downward through the floor of the middle ear, into the bulbus, causing a bulbar thrombosis; or it extends backward and outward into the lateral sinus, causing a sinus thrombosis; or straight backward into the cerebellum, causing a cerebellar abscess; or it breaks upward through the tegmen tympani or antri into the temporal lobe of the brain, causing brain abscess; and finally it may break directly inward by rupture of the oval or round windows or by causing necrosis of the lateral labyrinth wall, into the labyrinth itself, causing a labyrinthitis. These, then, are the various intercranial complications which may follow an abscess in the middle ear: Bulbar thrombosis; sinus thrombosis; cerebellar abscess; temporal lobe abscess; circumscribed labyrinthitis; diffuse serous labyrinthitis

* Read before the San Francisco County Medical Society, September 23, 1913.

(either secondary or induced), and diffuse suppurative labyrinthitis (acute and chronic). And the end stage of any or all of them may be meningitis, which next to extradural abscess is the commonest of all. Those complications which follow an acute middle ear suppuration are usually more diffuse, and therefore more dangerous than those which follow a chronic suppuration, and, with the exception of sinus thrombosis, in the great majority of cases, terminate in meningitis and death.

I shall begin the description of the different complications with meningitis and will, of necessity, give only a very short description in each case.

I. PACHYMEINGITIS (EXTRA DURAL ABSCESS).

It develops by direct extension from the middle ear through the mastoid cells until there is involvement of the dura externally. When it follows an acute otitis there is always an open sinus leading from the extra dural abscess to the middle ear; when it follows a chronic otitis there are always diseased mastoid cells separating the abscess from the middle ear.

Clinical Symptoms. (1) Slowly increasing headache (intermittent in acute or "open" and continuous in chronic or "closed") and localized over the region of the abscess, except in cases of deep extra dural abscess in the posterior fossa, when the pain is localized in the frontal region over the root of the nose.

(2) Percussion causes a feeling of discomfort over the site of the abscess.

(3) Temperature either normal or subnormal (although it may be 38° in children).

(4) Profuse discharge of pus from the middle ear, lasting over two weeks, which it is practically impossible to get rid of, for the ear refills almost immediately after the pus is wiped away. (An exception is seen in those cases caused by the streptococcus mucosus in which we have a red, retracted, dull membrane, bad hearing, no discharge, no pain or temperature; but simply an "organ gefuhl," a feeling of something abnormal in the region of the mastoid which is continuous and increased on pressure.

Prognosis. In acute cases, good; in chronic cases must be guarded. The diagnosis (unless symptom number 4 be present) is usually made accidentally at the time of operation and invariably during the operation, we will set up an inflammatory reaction in the cerebellum causing dizziness and nystagmus to the same side; or we will irritate the labyrinth itself causing a paralabyrinthitis, with dizziness, vomiting, loss of equilibrium and nystagmus to the opposite side.

II. PACHYMEINGITIS INTERNA.

There is no authentic history on record of a diagnosed case of pachymeningitis interna.

III. MENINGITIS.

It practically always develops secondary to some other intracranial complication. It may be serous, which very often heals, or diffuse suppurative, which never heals. A healed suppurative meningitis, means a mistake in diagnosis.

Symptoms. (1) Terrible headache, at first in paroxysms and later continuous.

(2) They are anxious and nervous looking and excited, their eyes always brilliant and staring; they pick listlessly at the bed-clothes and it is often hard to keep them in bed.

(3) Temperature always above 39° . Its absence indicates a low resistance and gives a bad prognosis.

(4) They have stiff neck both on active and passive movements and in all directions.

(5) Tenderness on pressure behind the neck.

(6) Kernig's symptom is very constant, and the legs are usually flexed upon the abdomen.

(7) One pupil is usually larger than the other (due to paralysis of the sphincter pupili muscle from involvement of the oculo-motor nerve).

(8) They are light-shy and have flashes of light before the eyes.

(9) Dermography and increase in all reflexes.

(10) Subnormal pulse (owing to the irritation of the vagus).

(11) Retention of urine, and constipation.

(12) Lumbar puncture (cloudy, bacteria, polymorphonuclear leukocytes); but lumbar puncture is only valuable if positive, it means nothing if negative.

And then as the condition progresses we get:

(13) Rotation of the eye inward (due to paralysis of the abducens nerve); large non-irritable pupils (paralysis of oculo motor nerve and sphincter pupili muscle).

(14) Fast, irregular pulse (paralysis of the vagus).

(15) Absence of reflexes.

(16) Incontinence of urine and faeces.

(17) Completely unconscious and death in from four to six days.

IV. SINUS THROMBOSIS.

Occurs equally often after acute as after chronic otitis. But the treatment is much simpler and the prognosis much better if it develops after an acute otitis. It occurs more often on the right than on the left side, for the groove of the right lateral sinus is deeper than the left, because it is the direct continuation of the horizontal sinus. We therefore get into the right lateral sinus during an operation more easily than into the left, and so does the pus, during a right sided mastoid abscess.

Sinus thrombosis may develop by direct extension from the mastoid cells through the sinus wall, with the ultimate formation of a thrombus inside the vessel; or the infection may enter the sinus directly through the emissary mastoid veins. The thrombus most frequently forms at the upper knee of the sinus, immediately below the entrance of the superior petrosal vein.

When the condition follows an acute otitis, we often get, not a sinus thrombosis in the lateral sinus, but the pus and bacillus are carried away into the general circulation and we get an osteophlebitis-pyemia, with metastasis in different, distant parts of the body, more especially the heart, lungs, brain and joints.

Clinical symptoms. (1) Pain over the mastoid region and tenderness on pressure over the sinus region.

(2) One or two attacks of vomiting, a little headache, a chill and the temperature jumps to 39.5° and becomes pyemic in character. Pulse always concurrent with temperature.

(3) Patient always tells you that he feels well, is happy and cheerful and very well satisfied with his condition and his surroundings.

(4) Fundus changes only occur when the thrombus interferes with the circulation of both the superior and inferior petrosal sinuses, and are therefore inconstant and unreliable.

(5) Metastasis of the lungs, heart and sterno-clavicular and shoulder joints. And in addition to these more common symptoms we must remember this fact: that the lower end of the sinus is the jugular bulb, and the jugular bulb, together with the vagus, glossopharyngeal and the accessory nerves pass out together from the skull through the jugular foramen. And as a result of the direct pressure of the sinus upon these nerves, we very often get symptoms from the nerves themselves, i. e.,—

Difficult breathing and hoarseness from the vagus (sup. laryngeal branch).

Paralysis of the soft palate and difficult swallowing from the glossopharyngeus.

Paralysis of the sterno-cleido-mastoid and trapezius muscles from the accessory.

And we must also remember that the sinus condyloideus, which originates from the bulb, passes through the foramen condyloideum along with the hypoglossal nerve, and by pressure very often causes hypoglossal nerve paralysis with deviation of the tongue to the diseased side.

A rare form of sinus thrombosis is hular thrombosis. It results from the direct extension of the infection downward through the thin floor of the tympanic cavity. It is seen only in acute cases. It always develops between the sixth and eighth days, being the one exception to the rule, that an intercranial complication never develops during an acute otitis, before the beginning of the third week. It does not develop during chronic otitis because of the sclerosed condition of the bone, and is practically therefore always seen in children, though it may also very rarely occur in adults.

Prognosis in sinus thrombosis is the best of any of the intercranial complications.

V. BRAIN ABSCESS.

Practically always develops during an acute exacerbation of a chronic otitis, and seldom during an acute otitis. They are usually single and in the temporal lobe, but in about 7% of the cases we find them combined with cerebellar abscess. It may be superficial, developing by direct extension from the dura beneath the surface of the brain; or it may be deep, extending along the vessels of the pia and into the substance of the brain itself. Deep brain abscesses are most apt to develop secondary to labyrinth disease.

It may be capsulated, producing localized symptoms, which are determined by the area of the brain which is involved; or non-capsulated producing symptoms very much more extensive than would be imagined from the real size of the abscess. The capsulated abscess is usually caused

by the diplococcus or streptococcus mucosus and the resulting pus is thick, creamy and odorless; whereas, non-capsulated abscesses are nearly always caused by the streptococcus or some other anaerobic bacteria, and the pus is thin, watery, and has a bad, stinking odor. You can tell whether the abscess is capsulated or not by the odor.

Clinical picture. About all that we will have in the beginning is a dull headache, a chill, and high temperature, lasting about two days and then the condition goes over into the so-called "latent stage," and is practically without symptoms. The patient becomes indolent, apathetic and sleepy; they talk slowly and have a slow cerebration and can't work. They are listless, never angry, never irritable, and show a general loss of interest in everything; differing from the happy, cheerful, optimistic state of sinus thrombosis; and from the irritable, anxious, nervous, excitable condition of meningitis. Temperature and pulse subnormal (although the temperature may be up to 103°), and they have headache, at first generalized over the entire head, and then localized over the region of the abscess. (The extra dural abscess case only has a headache if you ask him; the brain abscess case tells you that he has a dull, bad headache, and he presses upon his head to relieve it; whereas in meningitis, the headache is unbearable and the patient shrieks aloud in his agony.)

There is localized tenderness on pressure if the abscess is not too deep and there are local symptoms depending upon its location. Most important of all is sensoric aphasia, due to pressure upon the speech center in the left temporal lobe, the patient forgetting the names of familiar, well known objects. And then as the abscess extends we get facial twitchings and paralysis, drooping of the upper eyelid, dilated pupils and finally completely crossed paralysis, which practically always begins in the hand. When the abscess is low down, it will involve the fibers from the abducens nerve after crossing, causing paralysis of the external rectus on the diseased side. And then the patient gradually sinks into unconsciousness, death most frequently resulting from rupture of the abscess into the lateral ventricle.

CEREBELLAR ABSCESS.

Practically the first symptom of cerebellar abscess is (1) papillitis. It usually begins in the eye on the diseased side, only later involving the other side. And the patient develops (2) headache, not very intense in character, located posteriorly over the occiput and is usually associated with (3) stiff neck, or rather, they hold their heads stiffly and in carefully selected positions.

These three symptoms, i. e., (1) papillitis, (2) headache and (3) stiff neck, always give us a provisional diagnosis of a posterior fossa disease. But it might be meningitis, a tumor, (or cyst), in the cerebellum, or it could come from the labyrinth.

And then we get (4) generalized headache, (5) vomiting (without nausea), (6) dizziness (in attacks and not continuous); limiting the condition to the cerebellum or labyrinth.

And then, if we get (7) loss of co-ordination

(same side); (8) nystagmus, horizontal in character, at first to the diseased and later to either or both sides; and then enduring nystagmus with pointing and falling errors, we can be sure that the condition is in the cerebellum.

But inasmuch as the cerebellum on one side is in direct anatomical connection with the frontal lobe of the opposite side, the symptoms from both may be exactly the same, so that to differentiate one from the other may not be possible. And diagnosis of a cerebellar abscess or tumor is therefore very often found on autopsy to be in the frontal lobe on the other side.

However, certain symptoms if present, make the diagnosis comparatively simple.

(1) Papillitis always comes early in cerebellar disease.

(2) We get crossed paralysis from the frontal lobe which continues all through an act and is not only in the beginning of an act, as in the loss of co-ordination from the cerebellum.

(3) There may be an anosmia in frontal lobe involvement, along with symptoms of moral and sexual perversion, moral insanity.

(4) Pointing and falling errors present in cerebellar disease.

(5) Enduring nystagmus.

(6) And I can recall one case in which a diagnosis of cerebellar abscess was made certain on the strength of an abducens nerve paralysis on that side.

Just a few words on the pointing and falling reactions. Normally a man standing upright with eyes closed, will have no equilibrium disturbances and will point normally and straight with his arm, forearm, hand and finger, because the various movements are held in even muscular balance by the two normal halves of the cerebellum. But when there is a diseased condition of one side of the cerebellum (as, for example, abscess of the left cerebellum), there will be a loss or destruction of the nerve fiber influence from the left cerebellum and the patient will point to the right and fall to the right, because of the increased influence on the muscles of the right side of the body, given by the normal at non-diseased right cerebellum, i. e., the pointing and falling errors will be in the direction of the slow nystagmus. And when you irritate a normal patient's left cerebellum by rotating him to the right, you likewise get a pointing error and a falling error in the direction of his slow nystagmus, i. e., to the right. And if he looks to the right, he falls backward and if he looks to the left, he falls forward. But if he has a diseased left cerebellum, he no longer has a pointing error to the right, but he will either point normally or to the left and his falling reactions will correspond to his pointing errors.

LABYRINTHITIS

is nearly always a complication of a chronic otitis, although we have seen a number of cases following acute otitis, with suppurative labyrinthitis and death by meningitis as early as the fifth day.

Following a chronic otitis (and always during an acute exacerbation) the pus breaks through the oval or round window or is carried through the

venous circulation directly from the middle ear to the labyrinth or it enters the labyrinth through a necrosis of the lateral labyrinth wall.

In general the symptoms of labyrinthitis are noises, hard hearing, or deafness from the cochlea; and dizziness, vomiting and loss of equilibrium and nystagmus from the vestibule. And depending upon the strength of the labyrinthine involvement we will get—

- I. Acute purulent labyrinthitis;
- II. Chronic purulent labyrinthitis;
- III. Diffuse serous labyrinthitis;
 - (A) Induced
 - (B) Secondary
- IV. Circumscribed labyrinthitis.

I. *Acute Purulent Labyrinthitis*. Caused by middle ear and mastoid suppuration; fractures, hemorrhages.

Symptoms. (1) Strong nystagmus of third degree to the opposite side; (2) subjective dizziness and all surrounding objects turn in the direction of the quick component. As a result of the dizziness the patient feels sick and we get (3) vomiting; (4) objective dizziness, i. e., loss of equilibrium. The patient staggers and falls in the direction of his slow component. (5) Deafness and noises from the cochlea. Functional tests will show (6) spontaneous nystagmus; (7) negative caloric reaction; (8) negative turning reaction.

Termination (a) May heal and recover, giving rise to a chronic suppurative labyrinthitis. (b) May extend, causing meningitis and death.

II. *Chronic Suppurative Labyrinthitis*. If the acute suppurative labyrinthitis does not cause meningitis, it may become localized in the labyrinth (even in the absence of operation); the acute symptoms gradually subside and at the end of fourteen days we get—

- (1) Disappearance of dizziness and vomiting.
- (2) No longer loss of equilibrium.
- (3) Nystagmus becomes balanced or compensated, until you get it negative, or, first to the diseased side and then negative. The patient becomes apparently normal and you can't make a diagnosis from the symptoms, but only from a functional examination, which will show—
 - (1) Deafness.
 - (2) Caloric reaction negative.
 - (3) Turning reaction negative, or diminished to such an extent that there is a pathological difference between the two sides.
 - (4) Galvanic reaction may be positive or negative.

III. *Circumscribed Labyrinthitis* is the simplest form of labyrinthitis. It may follow a paralabyrinthitis or it may be the result of a fistula in the lateral labyrinth wall. And it may be the beginning of a diffuse serous or suppurative labyrinthitis.

Symptoms. (1) Patient will complain of attacks of dizziness with vomiting and loss of equilibrium.

(2) Hearing may be decreased and he may have noises, but is usually normal.

(3) Turning reaction and caloric reaction, positive and normal (unless patient has syphilis).

(4) Fistula symptoms present, unless in the presence of cholesteatoma, when it may be absent.

(5) Spontaneous nystagmus may be entirely absent; or if present, it is never to one side but always to both sides and usually stronger to one side than to the other.

(6) Compression gives nystagmus to the same side and aspiration to the opposite side.

Most cases show normal turning and caloric reaction unless there is coagulation of the endolymph in the horizontal semi-circular canal; in which case we won't get symptoms from the horizontal canal, but will be able to get them from the anterior or internal vertical canal.

IV. *Diffuse Serous Labyrinthitis* may be divided into two forms—(a) Diffuse serous induced. The infection goes through the lateral labyrinth wall and is caused by accident to the horizontal canal during operation; and (b) Diffuse serous secondary. Caused by extension of a circumscribed labyrinthitis and always in presence of a fistula.

(A) Diffuse Serous Induced.

- (1) No previous history.
- (2) Strong symptoms of dizziness and vomiting, which are increased on slightest movement of the head.
- (3) Loss of equilibrium; but the patient is too sick to move or to attempt to lift from the bed.
- (4) Spontaneous nystagmus of the third degree to the opposite side.
- (5) Hearing may be present or absent.
- (6) Turning and caloric reaction present, but patient usually too sick to try them.
- (7) Fistula usually negative.

(B) Diffuse Serous Secondary Labyrinthitis.

- (1) It always follows a fistula. There is a previous history of attacks of dizziness and vomiting.
- (2) Present extreme dizziness, loss of equilibrium and spontaneous nystagmus to the opposite side.
- (3) Turning and caloric reaction positive.
- (4) Fistula symptom positive.

The reason that we don't see more cases of diffuse serous induced labyrinthitis is that they show the exact symptoms of a stomach, intestinal or liver condition and are usually diagnosed and treated as such. And these cases usually end by resolution, or develop a suppurative labyrinthitis and die from meningitis.

For the end stage of any or all of these forms of labyrinthitis may be meningitis; the meningeal infection resulting from a direct inward extension of the labyrinth infection through the

- (a) internal auditory meatus;
- (b) ductus parilymphaticus, which terminates in the subarachnoid space;
- (c) or it breaks through the tegmen tympani into the middle fossa or through the Trautman's triangle into the posterior fossa.
- (d) And it may be carried through the lymphatics.

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SOCIETY REPORT

NORTHERN DISTRICT MEDICAL SOCIETY.

The Northern District Medical Society will hold a meeting at Marysville, June 9th, 1914, 10:30 a. m., Liberty Hall. All members are requested to be present.

J. W. JAMES, President.
E. C. TURNER, Secretary.

ORANGE COUNTY.

At the annual meeting of the Orange County Medical Association held April 7, 1914, the following officers were elected: Dr. D. W. Hasson, Buena Park, president; Dr. J. J. Clark, Santa Ana, vice-president; Dr. John Wehrly, Santa Ana, secretary; Dr. H. S. Gordon, Santa Ana, treasurer; Dr. C. D. Ball, Santa Ana, librarian.

Dr. C. D. Ball gave the Society an elegant banquet at the Dragon. After the banquet Dr. C. D. Ball read a paper entitled "Thirty Years' Practice in Midwifery," which was well written, and was discussed by all members present. The meeting was one of the best and largest attended of the year.

JOHN WEHRLY, Secretary.

OTOLOGICAL, RHINOLOGICAL AND LARYNGOLOGICAL.

This society will hold its meeting in Atlantic City in the week preceding the A. M. A., June 18 and 19, and it is expected there will be a large attendance.

PROVISIONAL PROGRAM OF THE PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY. TO BE HELD AT SEATTLE, WASHINGTON, HOTEL WASHINGTON, JULY 1, 2 AND 3, 1914.

Wednesday, 10 A. M.

1. Address of the President.
Clinton T. Cooke, Seattle, Washington.
2. Sclero-Corneal Trephining in the Operative treatment of Glaucoma.
Col. Robt. H. Elliot, London, England.

Wednesday, 2 P. M.

3. Filtrating Cicatrix Following the Elliot Trephining Operation.
James M. Patton, Omaha, Nebraska.
4. Demonstration of a Case that was Operated by the Elliot Method.
Norman H. Goodenow, Everett, Washington.
5. Extract of Senile Cataract and After Treatment.
A. K. Higgs, Portland, Oregon.

6. Subject to be announced.
Vard H. Hulen, San Francisco, Cal.
7. Subject to be announced.
Robert L. Nourse, Boise, Idaho.

Thursday, 10 A. M.

Col. Elliot will hold a clinic at one of the local hospitals. Place to be announced later.

Thursday, 2 P. M.

8. Demonstrations of Specimens, Photographs and New Instruments.
W. F. Schaller, San Francisco, Cal.
9. Cerebellar Syndrome.
Wm. House, Portland, Oregon.
10. The Relation of Special Sense Functions to Intercranial Growths.
Wm. House, Portland, Oregon.
11. Surgical Treatment of the Lateral Sinus with Report of Five Cases.
A. T. Wanamaker, Seattle, Washington.

12. Report of Two Cases of Gun-Shot Wound of the Ear with Cerebellar Abscess.
Cullen F. Welty, San Francisco, Cal.
13. A Method of Enlarging the Fronto-Nasal Duct and Opening the Agger-nasi Cell.
Nevin D. Pontius, Seattle, Washington.
14. Modern Investigations and Conclusions, Histological and Pathological, in the Field of Diseases of the Ear, Nose and Throat.
J. A. M. Hemmeon, Seattle, Washington.

Friday, 10 A. M.

15. Eye Changes in Diabetes.
Emil Schmoll, San Francisco, Cal.
16. Anomolies of Accommodation and Their Practical Significance.
Joseph L. McCool, Portland, Oregon.
17. Light.
Frederick Osborn, Seattle, Washington.
18. Etiology of Trachoma: Additional Observations and Additional Bibliography. (Continuation of Series of 1908-1910.)
F. B. Eaton, Portland, Oregon.

Friday, 2 P. M.

20. What Everybody Should Know About the Ear, Nose and Throat. A Series of Illustrations and Legends Compiled for a Child's Welfare Exhibit. Illustrated by Lantern Slides.
Edward E. Maxey, Boise, Idaho.
21. Interlacing Color Fields in Ocular Lues. Illustrated by Lantern Slides.
Hayward G. Thomas, Oakland, Cal.
22. Evolution of the Eye. (With Lantern Slides.)
Trevor Kincaid, Seattle, Wash.
23. Relation of Dental Arches to Nasal Insufficiency.
Wm. Cavanagh, Portland, Oregon.
24. Hysterical Manifestations in Relation to the Ear, Nose and Throat.
Copeland Plummer, Seattle, Wash.

NOTICE.

Railroad Rates. The Customary Railroad rate of one and one-third fare, provided 50 or more are in attendance, will prevail. When you buy your ticket to go to Seattle, pay the full fare and get a receipt-certificate. When you get to Seattle, present this to the Secretary to be signed and then when you get your return ticket, hand this receipt to the agent and he will give you a return ticket for one-third the full fare. Do not fail to get the receipt-certificate or to have it signed by the Secretary, for if you do, you have no redress.

WALTER K. SEELYE,

Chairman of the Program Committee, American Bank Bldg., Seattle, Wash.

CULLEN F. WELTY,

Secretary and Treasurer, Shreve Bldg., San Francisco, Cal.

SACRAMENTO COUNTY.

Regular meeting Sacramento Society for Medical Improvement, Hotel Sacramento, April 21, 1914. President Dr. J. W. James in the chair. Minutes of previous meeting read. Dr. W. A. Beattie presented a case of Polydactylism.

First paper of the evening: Trichinosis, by Dr. H. D. Barnard, describing two cases from Sacramento. Discussed by Drs. Parkinson, Williamson and Twitchell.

Second paper: Hydatid Cyst, by Dr. J. R. Snyder, describing case developing in a Californian. Discussed by Drs. Barnard, Twitchell, G. C. Simmons and Loizeaux.

Dr. Snyder elected to membership. Report of delegates to State Society made by Drs. Parkinson, Loizeaux and Gundrum. Adjourned.

F. F. GUNDRUM, Secretary.

SAN FRANCISCO POLYCLINIC SOCIETY.

Proceedings of the San Francisco Polyclinic Society, May 6, 1914.

The meeting was devoted to clinical demonstrations as follows:

1. A case of Raynaud's Disease. Dr. F. W. Kroll. Discussed by Drs. Taubles, Hartman and Mace.
2. Tonsillectomy in Status Lymphaticus. Dr. Sanford Blum. Discussed by Drs. Welty, Caldwell and Teass.
3. Syphilis in the Aged. Dr. Wm. E. Stevens. Discussed by Dr. M. Krotoszyner.
4. Pernicious Anemia. Dr. P. K. Brown. Discussed by Drs. Barrett and Blum.
5. Diabetes in Children. Dr. F. G. Burrows. Discussed by Dr. Blum.

HARRY P. ROBERTS, Sec'y.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of April the following meetings were held in the library of the society:

Section on Medicine. April 7, 1914.

1. Gastric Six-Hour Stasis, not due to Pyloric Stenosis. Howard Ruggles. Discussed by W. W. Boardman, H. D'A. Power and W. C. Alvarez.
2. The Surgical Treatment of Peptic Ulcer. Leo Eloesser.
3. The Medical Treatment of Peptic Ulcer. E. Schmoll and René Bine. Discussed by W. F. Cheney, P. K. Brown, H. P. Hill, W. C. Alvarez, G. E. Ebright, S. Bunnell, E. Schmoll, A. Newman and H. Brunn.

Eye, Ear, Nose and Throat Section. April 29, 1914.

1. Case of Neuritis of the 8th Nerve, with Destruction of the Vestibular Apparatus. (Luetic.) G. P. Wintermute. Discussed by H. B. Graham, L. Green and A. Baer.
2. Case of Mucocele of Frontal Sinus. H. B. Graham.
3. Report of Case of Tonsil Hemorrhage Eight Days after Operation. A. Baer.
4. Report of Case of Vincent's Angina. J. J. Kingwell.
5. Case of Vestibular Nerve Neuritis on Right Side. H. B. Graham.
6. Résumé of Six Cases Treated with Radium. M. W. Fredrick.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. Mary Taylor, Friday evening, April 24th. The following members were present: Drs. C. F. English, D. R. Powell, Mary Taylor, C. R. Harry, S. E. Latta, G. W. Walker, J. T. Davison, H. E. Sanderson, Margaret Smyth, J. D. Dameron, B. J. Powell, F. Clark, Emilie Gnekow, L. R. Johnson and R. T. McGurk, with Dr. Saxton Pope of San Francisco as guest.

Drs. Smyth, Powell and Harry, delegates to the State Society, were present and gave a report of the state meeting, and explained the action in regard to the casualty companies. Our society decided that its members were now free to accept the work of the casualty companies in accordance with the plan worked out by the State Society and the casualty companies.

At the conclusion of the discussion, Dr. Pope was called upon to give his paper, "Some of the Problems of Surgical Research." The doctor gave more of an informal talk than actual reading, which fact was greatly appreciated, and his discourse was so nicely punctuated with reminiscences and short stories that he kept his fortunate hearers in strict attention throughout the evening. His discussion of surgical shock, together

with a résumé of the action of camphor, caffeine, atrophine, and strychnine proved especially interesting. Dr. Pope was able by the aid of tracings made by himself to disprove some of the old theories concerning the therapeutic value of these drugs and at the same time was able to show the members just where these drugs could be of service.

At the conclusion of the meeting, the members were invited to partake of refreshments.

R. T. MCGURK, Secretary.

SANTA CRUZ COUNTY.

The Santa Cruz County Medical Society met May the 8th in Dr. G. P. Tolman's office in Watsonville. A very goodly number of the members were in attendance. The name of Dr. Carlo Gambotto of Santa Cruz, was proposed for membership. Dr. J. C. Bush was elected to fill the unexpired term of Dr. Frank Hart as censor. It was moved and carried that the report of the Committee of the State Society, as published in the May issue of "The Journal" be adopted. A committee was appointed to act with the Red Cross Society looking to the formation of a branch of that Society in Santa Cruz County. The committee is as follows: Drs. F. H. Koepke, G. P. Tolman, H. G. Watters, A. F. Cowden and B. H. Bush.

G. P. TOLMAN, Secretary.

BOOK REVIEWS

Rochester and the Mayo Clinic. By G. W. Broome. 8vo. Pp. 152. Published by "The Shakespeare Press," New York. Price not stated.

A rambling hodge-podge, inspired mostly by a picaresque animosity to the Mayos. An ill return for the hospitality which these men tender the multitude of medical guests who find opportunity to observe and learn under their roof. L. E.

"International Medical Annual." A year book of Treatment and Practitioners' Index. 1913, published by E. B. Treat & Co., N. Y. Price \$3.50.

The International Medical Annual for 1913 presents a very concise and impartial review of the year's new ideas on treatment both medical and surgical together with much valuable data as to the merits of each. It is a very handy book for ready reference. C. L. H.

Treatment of Chronic Leg Ulcers. By Edward Adams, M. D. 8vo, linen, pp. 127. Internat. Journ. of Surgery Co., publishers, New York.

This book gives directions how to put on an Unna's zinc-gelatin bandage; the rest of it is not worth reading. L. E.

Development and Anatomy of the Nasal Accessory Sinuses in Man. Warren B. Davis, M. D. Published by Saunders.

The present volume is a superb monograph on the embryological development of the accessory cavities in man. Dr. Davis was the Keen Research Scholar in Anatomy in Jefferson Medical College, but a large part of the present work was done in the laboratories of the Friedrichshain Krankenhaus in Berlin. There have been many divergent views concerning the exact method of the formation of the accessory cavities in embryos and children. The present work covers a series of nearly a hundred serially studied sections from the sixtieth day of intrauterine life to maturity and gives us the impression that his conclusions can be absolutely relied upon. The method for the removal "in toto" of the entire accessory cavity region, without pro-

ducing marked disfigurement of the face, is valuable and should be familiar to every pathologist. The book is beautifully illustrated from original plates.

H. H.

"Surgery—Its Principles and Practice." By Astley Paston Cooper Ashhurst, A. B., M. D., F. A. C. S. Published by Lea & Febiger, Philadelphia and New York, 1914.

A carefully written text-book of the older, conservative type; quite suitable to take its place among the list of students' manuals for the didactic teaching of surgery. There is nothing new in the subject matter, arrangement or manner of presentation, in fact some of the text applies to the more primitive surgery of the early aseptic era. In its way, it is very complete and clearly expounded though treatment is considered in a somewhat diffuse manner. Pathology is well handled. The student who has thoroughly assimilated the contents of this volume will be well prepared to take up the study of applied surgery but wholly dependent on a more graphic and practical course of teaching.

G. H. T.

Collected Papers by the Staff of St. Mary's Hospital (Mayo Clinic) for 1911. Octavo of 603 pages, illustrated. Philadelphia and London; W. B. Saunders Company, 1912. Cloth, \$5.50 net.

Comment on the interest and importance of the volumes issued by the Mayo Clinic seems superfluous. The mass of clinical material, the care with which it is observed, the uniformity of treatment make the statistical evidence coming from their clinic invaluable and unique.

Especially noteworthy among the papers are: Mixed Tumours of the Salivary Glands (56 cases); Malignant Tumours of the Tonsil (22 cases); Hodgkin's Disease (43 cases); Peptic Ulcer (1000 cases); an excellent paper on Gastrojejunostomy by W. J. Mayo; Gallstone Disease (citing 4000 operations on the biliary tract); Ventral Hernia (well illustrated, showing the Mayo technic); two papers on Cancer of the Breast (518 cases); two papers on Surgery of the Prostate (468 and 542 cases); Renal Tuberculosis (203 cases); a number of papers on Radiography of the Urinary Tract; and a number on the Thyroid. Of general diagnostic interest is Sistrunk's paper on the Prevalence of Intestinal Parasites.

L. E.

"Die moderne Therapie der Gonorrhoe beim Manne," Ein Leitaden für Studierende und Ärzte. By Prof. Dr. Paul Asch, Bonn 1914. A. Marcus & E. Weber's Verlag. Price, M.2.60 paper, M.3.20 cloth.

In this short treatise upon the modern treatment of Gonorrhea and its complications the author does not attempt to render a complete account of the various and numerous therapeutical measures that are in use or recommended in the battle against this dreaded and tenacious scourge. This fact, though, instead of detracting from the value of this little book, represents its most attractive feature, since the author succeeded in producing a very clear and convincing presentation of those methods of treatment which have proven satisfactory and reliable in his own experience. Thus, in 12 short lectures and in a concise and breezy manner, a complete résumé of the most important means at our command in the up-to-date treatment of Gonorrhea is rendered. Since gonorrheal therapy even in the hands of the experienced specialist often becomes refractory and disappointing, the perusal of the

little book will prove to be most useful and entertaining to general practitioner and specialist alike. The text is illustrated by 25 excellent cuts.

M. K.

"The Pituitary Body and its Disorders. Clinical States Produced by Disorders of the Hypophysis Cerebri." By Harvey Cushing, M. D., Associate Professor of Surgery the Johns Hopkins University, Professor of Surgery (elect) Harvard University. An Amplification of the Harvey Lecture for December, 1910. 319 illustrations, Published by J. B. Lippincott Co., Philadelphia and London, 1912. Price \$4.00.

In this book Dr. Cushing has brought together the clinical and experimental results of years of labor on the pituitary body. He has attempted to classify the cases according to disordered function of this gland and accompanies his discussion with complete case histories so that if his tentative classification should later be found not to hold, his cases are still available for others who desire to study the subject or check his results. The book is profusely illustrated with excellent photographs and radiographs; with the important statements standing out in clear relief. It is the only available book of reference in the English language which pretends to completeness, and as such has a definite place in our literature. The chapters on treatment are clear, concise and leave no doubt as to the author's indication, as far as his present studies permit him, for surgical interference.

S. H.

A Manual of Clinical Diagnosis by Means of Laboratory Methods. For Students, Hospital Physicians, and Practitioners. By Charles E. Simon, M.D., Professor of Clinical Pathology and Experimental Medicine in the College of Physicians and Surgeons, Baltimore. Eighth edition enlarged and thoroughly revised. Octavo, 809 pages, with 185 engravings and 25 plates. Cloth, \$5.00 net. Lea & Febiger, Philadelphia and New York, 1914.

Many will be glad to see a new edition of Simon's "Clinical Diagnosis." It combines short lucid discussions of the significance of laboratory findings with a greater amount of detail in the description of technic than is usually found in books of this class. This makes it especially valuable for the student. The author rightly lays stress on teaching the student to correlate his clinical laboratory work with the history and physical findings of individual cases. The average student is apt to regard clinical pathology as an end in itself and often remains satisfied with technical success. For instance, he will be quite pleased when he finds he can detect mucus, starch, muscle fibres and fat in a stool, and needs to be constantly reminded that these findings are of no value in themselves until he has considered them in relation to the patient's diet, physical findings, symptoms and history. To encourage the student to form the habit of making such judgments is the constant endeavor of every teacher of clinical pathology, but it is difficult to embody this in a book and it is doubtful whether the method adopted by Simon of detailing the essential laboratory findings of different diseases is a good method to this end. It is not diseases that the student has to be taught to diagnose, but patients.

T. A.

"Practical Sanitation. A Handbook for Health Officers and Practitioners of Medicine." By Fletcher Gardner, M. D. and James Persons Simonds, B. A., M. D. Illustrated. Published

by C. V. Mosby Company, St. Louis, 1914.
Price \$4.00.

A volume of about 400 pages which covers briefly and succinctly almost the entire field of sanitation. Written with the intention of supplying within the limits of a single moderate sized volume, a not too condensed exposition of the problems of the communicable and preventable diseases, and general duties of health officers, the authors have succeeded admirably.

Considering the importance of typhoid fever as a preventable disease, more attention might have been paid to a discussion of the methods of tracing infections.

Under diphtheria, no mention is made of the absolute necessity from a public health standpoint of requiring more than one negative throat swab before release from quarantine.

The chapter on laboratory methods and the collection of specimens is brief but to the point and can be read with profit by most physicians.

Perhaps in view of the general excellence of the book one should overlook minor causes for differences of opinion such as the importance attached to fomites in the spread of measles and the statement that flies and mosquitoes may act as carriers of small pox.

The work is of especial value to health officers of small towns and to those officers of the public health who must necessarily divide their time between sanitation and the practice of medicine.

WILFRED H. KELLOGG.

Genito-Urinary Diseases and Syphilis. By Edgar G. Ballenger, M. D., Adjunct Clinical Professor of Genito-Urinary Diseases, Atlanta Medical College; Editor Journal-Record of Medicine; Urologist to Westley Memorial Hospital; Genito-Urinary Surgeon to Davis-Fisher Sanatorium; Urologist to Hospital for Nervous Diseases, etc., Atlanta, Ga., assisted by Omar F. Elder, M. D. The Wassermann Reaction by Edgar Paullin, M. D. Second edition revised, 527 pages with 109 illustrations and 5 colored plates. Price \$5.00 net. E. W. Allen & Co., Atlanta, Ga.

In general this work covers the usual ground of text books on the subject. Of these a number have so recently been offered by publishers that this one seems at first sight to be rather superfluous. A new work should be justified by sufficient originality, or, at least, characterized by a personal point of view. While the volume is somewhat lacking in both these qualities yet the rapid development of diagnostic methods and therapy of genito-urinary diseases demands at short intervals a review appealing to students and those practitioners depending upon text books for a knowledge of the latest. Recognizing this the writers have incorporated, as stated in the preface, the following newer discoveries; vaccine therapy, the phthalein test for function of the kidneys, pyelography, the Wassermann reaction and luetin test, salvarsan and neosalvarsan, etc.

The insertion of extracts from the texts of noteworthy contributions are ingeniously and freely used throughout the book, thus giving important first hand information from original sources, a method to be commended. Original subject matter is to be found in the chapter on the treatment of urethritis by sealing in argyrol with collodion and further in a theory of the etiology of hypertrophy and nervous disorders of the prostate based upon the demonstrations of large numbers of a variety of attenuated organisms in the secretion, these organisms producing no pus but a chronic toxic condition. To avoid infection mixed vaccine treatment for gonorrhea is recommended.

On the whole the work makes a favorable impression without arousing any enthusiasm. The chapter on salvarsan deserves reading. It is both good and practical. M. S.

Modern Medicine. Its Theory and Practice. In original contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M. D., F. R. S., Regius Professor of Medicine in Oxford University, England; Honorary Professor of Medicine in Johns Hopkins University, Baltimore; formerly Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and in McGill University, Montreal; and Thomas McCrae, M. D., Professor of Medicine in the Jefferson Medical College, Philadelphia; Fellow of the Royal College of Physicians, London; formerly Associate Professor of Medicine in Johns Hopkins University, Baltimore. In five octavo volumes of about 1000 pages each, illustrated. Volume II. Diseases caused by Protozoa and Animal Parasites—Diseases Due to Physical, Chemical and Organic Agents—Diseases of Metabolism and of the Respiratory System. Just ready. Price per volume, cloth, \$5.00, net; half morocco, \$7.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

Volume II shows a logical rearrangement of subjects and a number of new contributors since the last edition. Most of the chapters give evidence of critical revision, bringing their subjects abreast of the more recent advances. Many of the chapters stand out especially for their excellence. Among these may be mentioned: Osler and Churchman's Syphilis; Futcher's Diabetes; Stiles' Animal Parasites.

A few points of special interest scattered throughout the volume seem worthy of notice. Amebic Dysentery, Strong: At least two species of amebae are not definitely distinguished, the pathogenic *Entameba Histolytica* and the non-pathogenic *Entameba Coli*. Undoubted pure cultures have not been obtained. The treatment of amebic dysentery by emetics has been found to be almost specific. Malaria, Craig: Pure cultures of the plasmodium have been grown for several generations on dextrose blood. Trypanosomiasis, Bruce: Essentially a disease of the lymphatics, the diagnosis is most readily made by inserting a hypodermic needle into a swollen lymph gland and withdrawing a drop of fluid. This will contain trypanosomes in larger numbers than are present in the blood. This method is applicable also for finding treponemata in secondary syphilis. Syphilis, Osler and Churchman: The clinical and pathological pictures are masterful. In diagnosis, stress is rightly laid upon the imperative duty and comparative ease of demonstrating the treponema in chancres. In treatment the article is not so strong, especially in the discussion of the value of salvarsan. Several conditions are said to contraindicate its use, namely: "Late tabes, general paresis, acute cases of cerebrospinal lues," etc. This statement may well be challenged. Of the Swift-Ellis intradural treatment brief mention is made, and the results are said to be merely "suggestive." In discussion prophylaxis the suggestion of making syphilis reportable by law is frowned upon as being impracticable and unwise. In view of the fact that such a law is actually being enforced successfully in New York and elsewhere, this opinion seems surprisingly behind the times. Alcohol, Lambert: Besides an excellent picture of the symptomatology, etc., the Townes-Lambert method of treatment is given in detail. Diabetes, Futcher: A valuable part of this article is the clear and stimulating discussion of the interrelation of the functions of the ductless glands. Mechanics of Respiration: This is excellent throughout. Obesity, Anders: In discussing differential diagnosis it is surprising to find no mention of hypophyseal disease. Diseases of Naso-Pharynx, Packard: Here one is surprised under etiology to find no mention of the infective character of coryza and no discussion of its bacteriology. Diseases of the Bronchi, McPhedran: Excellent. Diseases of the Lungs, Hare: This is

disappointing. The treatment seems to be merely "traditional" and often appears to be at variance with the results of experimentation. Hare says: "The most valuable drugs in bronchopneumonia are the stimulants, and of these alcohol holds first place—it should be pushed to its physiological limits. Even in young children large quantities may be given in twenty-four hours without causing toxic effects." Diseases of the Pleura, Lord: Excellent. Pneumothorax, Lord: The conclusions regarding artificial pneumothorax in treatment of tuberculosis seem ultra-conservative, even to an unreasonable extent, in view of the often remarkable results in properly selected cases.

On the whole the articles in this volume are of extremely high order and the outlook for this series is of the best.

H. S. F.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(This Department will be pleased to supply information concerning products passed or rejected by the Council on Pharmacy and Chemistry of the A. M. A., or submit queries to the Council when information is not available.)

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

TRYPSIN, Fairchild.—A powder consisting of the proteolytic enzyme of the pancreas, separated to a considerable extent from the other enzymes and constituents of the gland and of a definite strength. Trypsin digests proteins and nucleoproteins in slightly alkaline media. Fairchild Bros. and Foster, New York (Jour. A. M. A., March 7, 1914, p. 776).

CEROLIN.—Cerolin consists of the fats, cholesterol, lecithin and ethereal oil extracted from yeast by alcohol. Experiments have indicated that the laxative action of yeast depends on the fats and lipid constituents and that in skin affections these substances have the action of yeast itself. Hence cerolin, marketed in the form of cerolin pills, 1½ grains, is said to be useful in furunculosis, acne and in other skin affections. It is also said to be useful in habitual constipation, leukorrhea, erosions of the vagina and cervix and in similar diseases. Merck and Co., New York (Jour. A. M. A., March 21, 1914, p. 931).

REFINED AND CONCENTRATED TETANUS ANTITOXIN, SQUIBB.—For description see New and Nonofficial Remedies, 1914. Marketed in the form of syringes containing respectively an immunizing dose and a curative dose. E. R. Squibb and Sons, New York (Jour. A. M. A., March 21, 1914, p. 931).

TYPHOID VACCINE (Immunizing).—For description of typhoid vaccine see N. N. R., 1914, p. 259. It is prepared according to the method of the U. S. Army Laboratory. Marketed in ampule and syringe packages, each containing 500 million, 1000 million and 1000 million killed typhoid bacilli. H. M. Alexander and Co., Marietta, Pa. (Jour. A. M. A., March 28, 1914, p. 1014).

B. B. CULTURE.—A pure culture of *Bacillus Bulgaricus* marketed in bottles containing 90 Cc. Intended for use in intestinal indigestion and for the enterocolitis of infants. B. B. Culture Laboratories, Yonkers, N. Y. (Jour. A. M. A., March 28, 1914, p. 1014).

SCARLATINA STREPTO-SEROBACTERIN, MULFORD (Immunizing).—A sensitized scarlatina streptococcic vaccine, sold in packages containing

three doses of killed sensitized streptococci. (The Council has at present no means for determining the identity and purity of serobacterins and these must therefore be used on the guarantee of the manufacturer, alone). (Jour. A. M. A., April 11, 1914, p. 1168).

PHENOLPHTHALEIN-AGAR.—Phenolphthalein-agar is agar-agar impregnated with phenolphthalein, 100 Gm. containing 3 Gm. of phenolphthalein. It has the properties of agar-agar augmented by those of phenolphthalein. The Reinschild Chemical Co., New York (Jour. A. M. A., April 11, 1914, p. 1168).

CAUSTICKS (Silver Nitrate 75 per cent.).—Wooden sticks 1½ inches long, tipped with a mixture of silver nitrate 75 per cent. and potassium nitrate 25 per cent. Each stick is to be used but once. Antiseptic Supply Co., New York.

CAUSTICK APPLICATORS (Silver Nitrate 75 per cent.).—Wooden sticks 6½ inches long, tipped with a mixture of silver nitrate 75 per cent. and potassium nitrate 25 per cent. Each stick is to be used but once. Antiseptic Supply Co., New York.

CUPRICSTICKS (Copper Sulphate 60 per cent.).—Wooden sticks 1½ inches long, tipped with a mixture of copper sulphate 60 per cent., alum 25 per cent. and potassium nitrate 15 per cent. Each stick is to be used but once. Antiseptic Supply Co., New York.

STYPSTICKS (Alum 75 per cent.).—Wooden sticks 1½ inches long, tipped with a mixture of alum 75 per cent. and potassium nitrate 25 per cent. Each stick is to be used but once. Antiseptic Supply Co., New York. Jour. A. M. A., April 25, 1914, p. 1328).

MERCURIC CHLORID AND THE PUBLIC.

—In commenting on the use of mercuric chlorid tablets by the public and on the attempts to check this by special legislation, M. I. Wilbert points out that the exploitation of this drug under non-descriptive titles such as "antiseptic tablets" is partially responsible for their indiscriminate use. The fact that they are given a distinctive shape or color does not serve to protect the purchaser if he is uninstructed as to their contents; instead it tends to elaborate on the misuse of the tablets. Physicians are to some extent responsible for the public use of tablets of corrosive mercuric chlorid, for in the past these tablets have been prescribed or given to patients for antiseptic purposes without sufficient precaution as to their poisonous character (Jour. A. M. A., March 28, 1914, p. 1042).

THEOBROMIN SODIUM SALICYLATE versus "DIURETIN".—Theobromin sodium salicylate, now described in New and Nonofficial Remedies and sold by most pharmaceutical firms, was first introduced under the therapeutically suggestive name "Diuretin." While under its proper title it can be bought for 35 to 45 cents an ounce, the proprietary "Diuretin" costs \$1.75 an ounce. An examination in the A. M. A. Chemical Laboratory has demonstrated that the quality of the product as sold under its chemical name is equal to that sold as "Diuretin." In view of these findings physicians should learn to prescribe the drug by its chemical name (Jour. A. M. A., April 4, 1914, p. 1108).

THE SERUM TREATMENT OF TETANUS.

The great value of antitetanus serum as a preventive is unquestioned. As a specific cure the serum has fallen short of expectation; nevertheless, it has decreased the mortality from tetanus. Tetanus antitoxin acts only on the toxin not yet combined with the nerve cells. This emphasizes the early and liberal use of antitoxic serum largely by intraspinal introduction in order to neutralize the toxin that still is free and on its way to the nerve cells, the necessity of thorough cleansing

of the wound to remove all source of continued intoxication, and of conserving the strength of the patient in the hope that the morbid process caused by the toxin already in the nerve cells may be overcome (Jour. A. M. A., April 11, 1914, p. 1174).

SALVARSAN THERAPY.—Wechselmann holds that the cases of salvarsan fatalities from encephalitis hemorrhagica were due to uremia, resulting from the irritation of the kidneys, in most cases damaged by administration of mercury. On the basis of this theory he argues for a pure salvarsan therapy in place of the generally combined mercury and arsenic treatment. He warns that salvarsan should be administered only after due consideration of the dose indicated and of the determination of absence of contraindications. No one can dispute that nearly all the deaths from salvarsan have been caused by its indiscriminate use, either in the face of contraindications or too large or too frequent dosage (Jour. A. M. A., April 11, 1914, p. 1175).

THE HYPOPHOSPHITE FALLACY.—The hypophosphites were introduced by Dr. Churchill as a specific remedy for consumption on the theory, since proven incorrect, that phthisis was due to a lack of oxygen in the tissues. On the supposition that hypophosphites were oxidized in the body, he presumed them to be a source of energy for the nervous system. Not only does the evidence indicate that in consumption there is an increase of oxidation, but there is no evidence that phosphorus acts as an energizer of oxidation and further, there is no proof that the hypophosphites enter into general metabolism. Not only is there no evidence of the utility of hypophosphites but it has long ago been demonstrated that they are excreted unchanged. While the discredited hypophosphite theory is no longer contained in textbooks, the fallacy is kept alive by proprietary interests, and physicians who depend for their therapeutics on the "literature" of proprietary concerns, still employ the hypophosphites (Jour. A. M. A., April 25, 1914, p. 1346).

SALVARSAN IN EROSIVE BALANITIS.

ANSTRUTHER DAVIDSON, M. D., Los Angeles.

Erosive balanitis is not at all uncommon in this city, but many practitioners continue to class it as chancroid. The recommended methods of treatment—slitting up the foreskin when required, bathing with peroxide of hydrogen, etc.—are absolutely useless in many cases as the numerous fatalities show.

As this disease is in part a spirochetal affection I have for the last year been using salvarsan intravenously, just as in syphilis. In some cases the resultant cure has been almost magical in its rapidity; a few seemed to be unaffected by it, and in one case seen two weeks before death, it was apparently of no benefit. I wish those who have an opportunity would try this and record the result in this Journal.

A CONSERVATION OF VISION CAMPAIGN, WITH A REQUEST FOR CO-OPERATION.

For some time now the American Medical Association, through a special Conservation of Vision Sub-committee of the Council on Public Health of the A. M. A., has been striving to initiate throughout the United States a campaign of education, having for its end object the education of the people concerning the great necessity for proper work in the conservation of vision.

The undersigned has been requested by the A. M. A. Conservation of Vision Committee to take charge of the lecture work in California.

At the Santa Barbara meeting of the Medical

Society of the State of California, the State Committee on the Conservation of Vision was consolidated with this A. M. A. Committee.

By addressing the Conservation of Vision Committee of the American Medical Association, 535 N. Dearborn St., Chicago, Ill., all who are interested can obtain copies of the literature that has been put out on this subject.

An invitation is herewith extended to all eye specialists in the state, or general practitioners who are interested in public health matters, to co-operate in this campaign of Conservation of Vision in California.

It is the purpose to present lectures before women's clubs, parent-teachers' school associations, and other organizations interested in the conservation of the public health.

It is hoped that the eye specialists, who should be particularly interested in this work, will co-operate in California as they have in other States, so as to show a good report for California in this propaganda.

The undersigned will be glad to correspond and give further information to all members of the profession who are interested.

Very truly,

GEORGE H. KRESS,

Chairman of the State Medical Society Committee on Conservation of Vision.

245 Bradbury Bldg., Los Angeles, Cal.

PERSONNEL OF THE HOUSE OF DELEGATES, SANTA BARBARA, APRIL, 1914.

H. Bert Ellis, Henry Horn, G. H. Taubles, A. W. Hoisholt, Geo. G. Reinle, L. P. Adams, T. C. Edwards, H. R. Oliver, Edw. R. Drucks, O. D. Hamlin, René Bine, H. E. Alderson, A. H. Mays, E. E. Brinkerhoff, R. R. Campbell, M. R. Gibbons, Dudley Tait, Kaspar Pischel, G. E. Tucker, H. B. A. Kugeler, C. G. Kenyon, H. A. L. Ryfkogel, J. L. Howard, R. E. Bering, B. T. Church, C. Van Zwalenburg, David Hadden, D. H. Moulton, L. R. Ryan, G. H. Kress, Margaret Smyth, C. B. Hare, A. B. Cooke, A. H. Kiger, H. G. Marxmiller, Carl H. Parker, P. K. Brown, W. B. Coffey, C. C. Browning, C. H. Whitman, A. F. Gillihan, Jno. Carling, P. C. H. Pahl, C. P. Thomas, U. S. Abbott, P. B. Fry, F. F. Gundrum, F. B. Carpenter, H. W. Gibbons, R. L. Rigdon, G. A. Hare, P. Manson, R. T. Stratton, G. L. Cole, Wm. W. Kerr, W. T. McArthur, E. S. Loizeaux, A. M. Henderson, B. J. Powell, C. W. Page, A. H. Dunn, David Powell, V. G. Clark, W. I. Terry, Howard Morrow, C. A. Dukes, A. H. Buteau, A. A. Alexander, Jno. L. Dryer, Geo. E. Ebricht.

MEMBERS AND GUESTS REGISTERED AT THE FORTY-FOURTH ANNUAL MEETING OF THE MEDICAL SOCIETY, STATE OF CALIFORNIA, SANTA BARBARA, APRIL, 1914.

Adams, L. P.; Alderson, H. E.; Allen, Eliot; Alexander, A. A.; Ainley, F. C.; Anton, F. L.; Armstrong, J. M., and Mrs. Armstrong; Austin, R. E.

Bakewell, Benj.; Barkan, H.; Barry, W. T.; Barton, H. P.; Bering, R. E., and Mrs. Bering; Bine, René; Birtch, F.; Bixby, E. M.; Black, S. P.; Blodgett, T. D.; Boland, W.; Bonyng, C. W.; Brem, W. V.; Breyer, Jno. H.; Brinkerhoff, E. E.; Boardman, W. W.; Brown, Adelaide; Brown, F. A.; Brown, J. McK.; Brown, C. K.; Brown, Rexwald; Broome, Wm. J.; Browning, C. C.; Browning, Miss G.; Bucknam, R. W.; Bullock, N. H.; Buteau, S. H.

Cameron, H. McD.; Campbell, R. N.; Campbell, W. H.; Carling, J. A.; Carpenter, F. B.; Carrington,

ton, P. M.; Cecil, A. B.; Cheney, W. F.; Church, B. F.; Clark, V. G.; Clark, W. R. P.; Clark, W. T.; Cochran, Guy; Coffey, W. B.; Cooke, A. B.; Cole, Geo. L.; Condit, J. C.; Courtenay, G. P.; Crabtree, H. T.; Crane, C. C.; Cummings, R. S.; Cunnane, W. B.; Currie, D. H.; Dakin, W. B.; Davies, B. C.; Deane, Louis; Detling, F. E.; Dickson, C. S.; Dickson, E. C.; Dresser, R. O.; Dryer, Jno. L.; Drucks, Edw. R.; Dudley, Wm. H.; Duffield, Wm.; Dukes, C. A.; Dunsmoor, N. C.

Ebright, G. E.; Edwards, T. C.; Ely, Leonard W.; Ellis, H. Bert; Evans, G. H.; Ewer, Edw. N.; Fleming, E. W.; Fisher, Jas. T.; Fleishner, E. C.; Flint, W. H.; Foster, H. E.; Franklin, J. H.; Frick, D. J.; Fry, P. B.; Fulton, Dudley.

Galbraith, A.; Gibbons, H. W.; Gibbons, M. R.; Gillihan, A. F.; Graham, Lorne B.; Graves, J. H.; Green, L. D.; Griffin, C. F.; Grosse, A. B.; Gundrum, F. F.

Hadden, David; Hall, J. U.; Hamlin, O. D.; Hanlon, E. W.; Hare, Chas. B.; Harry, C. R.; Hart, G. H.; Hart, Lasher; Hasson, Ray (guest); Hastings, Hill; Henry, W. O.; Hoag, E. B.; Hoisholt, A. W.; Horn, Henry; Howard, B. F.; Howard, J. L.; Houston, A. J.; Hulen, V. H.

Irwin, W. H.

Jackson, Temple; Johnson, Wm. J.; Jones, Philip Mills; Jordan, P. A.

Kane, J. M.; Kenyon, C. G.; Kerr, Wm. W.; Kiefer, H. A.; Kiger, W. H.; King, Jno. C.; Kinney, L. C.; King, Jos. M.; Kress, Geo. H.; Kreutzman, H. J.; Krotoszyner, M.; Kugeler, H. B. A.; Kyle, J. J.

Lederman, E. D. (guest); Lee, Helen; Leffer, Anna B.; Lewis, W. M.; Lippman, Caro W.; Loringier, A. S.; Lockwood, C. D.; Lovejoy, E. D.; Lowman, C. L.; Lozieaux, E. S.; Luton, G. I.

Mackerras, R. H.; Mackenzie, W. W.; Malaby, Z. T.; Malsbary, G. E.; Manning, W. H.; Manson, Peter; Martin, H. R.; Mattison, F.; Maxmiller, H. G.; Mays, A. H., and Mrs. Mays; McArthur, W. T.; McClenahan, H. C.; McKee, C. B.; Melvin, J. T.; Merrill, B. E.; Miller, Austin W.; Miller, F. W.; Miller, Robt. W.; Millspaugh, W. P.; Milton, J. L.; Mitchell, Elsie Reed; Molony, M.; Montgomery, C. H.; Morrow, H.; Mosgrove, Anna M.; Morton, Ada S. C.; Morton, A. W.; Morton, L. B.; Moseley, G. G.; Moulton, D. H.; Moyse, J. I. (guest).

Newell, Edw.; Newman, H. P.; Nusbaumer, Pauline.

Oldham, J. Y.; Oliver, H. R.; O'Brien, E. S.; O'Neill, A. A.; O'Neill, Stella M.; Orbison, F. J.; Osborn, H. B.

Page, C. W.; Pahl, P. C. H.; Parker, C. H.; Parkinson, J. H.; Peek, A. H.; Peers, Robt. A.; Pischel, Kaspar; Pond, H. M.; Pottenger, F. M.; Powell, B. J.

Reinhardt, Geo. F.; Reinle, G. G.; Rigdon, R. L.; Roblee, W. W.; Roberts, W. H.; Rogers, F. L.; Roth, L. J.; Root, S. W. (guest); Ryan, L. R.; Ryfkgel, H. A. L.

Schmoll, Emile; Schneider, E. H.; Seabolt, Gertrude; Shepard, C. A.; Sherman, H. M.; Sherry, H.; Sill, E. R.; Smith, Bernard; Smith, Stephen; Smyth, Margaret; Speik, F. A.; Stevens, Wm. E.; Stratton, R. T.; Strietmann, Wm. H.; Strong, D. C.; Stoddard, C. S.; Stoddard, T. A.; Stover, W. M.; Suddryhne, B. F.; Sweet, Earl.

Tait, Dudley; Taltavill, Wm. A.; Taubles, G. H.; Taylor, W. J.; Terry, W. L.; Thomas, C. P.; Thomas, H. G.; Tucker, G. E.

Van Dalsem, S. B.; van Kaathoven, J. J. A.; Van Zwalenburg, C.; Voorsanger, Wm. C.; Wallace, W. S.; Watkins, E. F. P. (guest); Watkins, Jas. T.; Watson, H. G.; Wayland, C. A.; Welty, C. F.; Wells, Geo. S.; White, Grace R.; Whitman, C. H.; Wilbur, R. L.; Williams, Ralph; Williams, T. M.; Wills, Wm. Le Moyn; Wintermute, G. P.; Withersbee, O. O.; Worthington, Geo. B.; Wright, H. W.; Zieg, John.

WARNING TO USERS OF TURPENTINE FOR MEDICINAL OR VETERINARY PURPOSES.

As a result of an investigation by the U. S. Department of Agriculture, it has been found that the adulteration of turpentine with mineral oils is so widespread that druggists and manufacturers of pharmaceutical products and grocers' sundries used for medicinal and veterinary purposes should exercise special caution in purchasing turpentine. Those who use turpentine for this purpose, unless they are careful, run the risk of obtaining an adulterated article and unnecessarily laying themselves open to prosecution under the Food and Drugs Act.

It has been found, moreover, that the turpentine sold to the country stores especially, as usually put out by dealers and manufacturers of grocers' sundries, is often short in volume by as much as 5 or 10 per cent. Dealers, therefore, should also protect themselves through a guarantee from the wholesaler that the bottle contains the full declared volume.

The Department has found that turpentine may be adulterated in the South where it is made and that the further it gets from the South the more extensively and heavily it is adulterated.

In all cases druggists, manufacturers and wholesale grocers should satisfy themselves that the turpentine is free from adulteration and is true to marked volume.

SUMMER COURSES.

The summer courses of the Society of Instructors of the University of Berlin will be given the 1st of October, 1914, and last until the 28th of October, 1914.

A free catalogue and further information can be obtained from Herrn Melzer, Ziegelstrasse, 10/11 (Langenbeck-Haus), Berlin, Germany.

NEW MEMBERS.

Dozier, Wm. E., Susanville.
Walsh, F. D., Susanville.
Drucks, Edw. S., Susanville, Cal.
Garner, R. W. T., Susanville.
Bolton, Becker B., Edgemont.
Davis, Fred J., Westwood.
Wilson, E. S., Greenville.
Bolton, M. B., Quincy.
Lasswell, B. J., Quincy.
Henry, Walter Orlando, Los Angeles.
Franklin, James Wm., Santa Monica.
Friesen, Jacob Frank, Los Angeles.
Mebarry, Jay S., Los Angeles.
Reynolds, F. W., San Pedro.
Watson, Harry Goldsborough, Los Angeles.
de Niedman, Wm. F., Los Altos, Cal.
Lewis, W. J., Ventura.
Risley, Edw. H., Loma Linda.
Reis, H. W., San Francisco.
Davis, C. C., San Bernardino.
Commons, E. L., Los Angeles.
Conlin, B. M. J., Long Beach.
Hall, Lura J. B., Los Angeles.
Heath, S. Horace, Los Angeles.
Pettis, J. H., Fresno.
Johnson, J. H., Los Angeles.
Cleverdon, E., San Diego.
Stoddard, Chas. Lincoln, San Diego.
Stoddard, Clara May, San Diego.
Burger, T. O., San Diego.
Burton, Frank A., San Diego.

DEATHS.

Rohm, J. T., Redding, Cal.
Bainbridge, Jas. A., Lathrop, Cal.
Nichols, Chas. B., Los Angeles.
Henderson, Edw., Pomona.
Colerick, A. E., Pacific Grove.
Bond, Jas. M. (died in Healdsburg, Cal.)

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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No. 7

EDITORIAL NOTES

ELIMINATING THE UNQUALIFIED.

The interesting condition of unrest which the JOURNAL has commented upon quite frequently during the past two years, and which has been so evident to all observers of sociologic conditions, is, as Favill points it, bound to result in many betterments though just how the result is to be reached may not at first be apparent. As the meaning of a word may, in time, be quite reversed through usage, so many of the ultimate developments of what may at first appear to be vicious to a given individual, from his point of view, may prove to be distinct advances in the welfare of all the people. For example, consider industrial accident insurance, and what will surely follow it before many years have passed, sickness insurance. There is room for honest difference of opinion as to whether this is a sociologic betterment or not. There is plenty of room for honest difference of opinion as to whether it is to be an advantage to the medical profession or a great harm; time alone will tell the true answer to these questions. In one way, however, it certainly seems to promise a decided advance for the injured working person, and, as he is so numerous, that means an advance for nearly all the people. The quack doctor, the incompetent physician, the faddist and the follower of unbaked or half-baked cults, will be eliminated. Why? Because of our old friend, "Dollars and Cents." A man will do a lot of foolish things or fail to do some sensible ones when merely his own health or the health of his family or other people is concerned, but when anything touches his pocket, he sits up and takes notice very quickly. The public health campaign cry of "millions for hogs but nothing for humans"

is familiar to all of us and is an illustration. An employer of labor may be a Christian "Scientist," as also may be the manager of an insurance company covering a large number of working people, and they may rest quite tranquilly in their delusions so long as there is nothing much the matter with them and their pockets are not touched. But what will these shrewd business men do when some of the working people for whom they are financially responsible get into trouble and there is the possibility of a loss of hundreds or thousands of dollars? Is it not obvious? Are they going to take chances on the incompetent? Are they going to allow the possible loss of this money because of a faddist idea, or are they going to get the best medical aid they can secure? What business man, employer of labor or boss of an insurance company, is going to allow a naturopath, a poorly qualified physician or any one of the horde of freaks and quacks to endanger his money by caring for the injured persons for whom he is financially responsible? It is just common sense—the rarest of all things, to be sure, but still that is what it is called. And so, too, with the industrial sickness insurance work when it shall come, as come it surely will. A thoroughly skilful surgeon or physician may save the employer or the company a great deal of money; a poor practitioner or one who merely pretends to a knowledge of the healing art which in reality he does not possess would be an expensive luxury to the man who has to pay; and when it comes to paying, he is going to be mighty thoughtful. And so it looks very much as though some of the harm done by the passage of the absurd medical licensing law, will be counteracted by this other and far-reaching law. A considerable number of men have been licensed under the present act who tried repeatedly to secure licenses under the old law but who could not because they were not properly qualified. The records in our office cover all of these cases quite fully and so through the State Society office the big employer and the insurance man can be protected. Furthermore, if the County Medical Societies will follow out the plan of referring the names of all applicants to our office for investigation and report before election, these objectionable persons will not gain membership in our societies, and if the industrial work is limited to the members of our societies, it is also obvious that the employer, the state and the companies are at once insured against unknowingly employing one who is not a properly qualified practitioner of medicine and surgery. When it comes to our friend "Dollars and Cents," the process of eliminating the unqualified is certain sure.

NO CITY LICENSE FOR PHYSICIANS.

An attempt by a California city to compel physicians to pay a city license tax on the practice of their profession within its limits was defeated May 18th last, when Judge F. G. Finlayson, of the Superior Court of Los Angeles County, pronounced the city ordinance in question unconstitutional.

In May 1912 the Board of Trustees of the City

of Glendora, Los Angeles County, California, passed a city ordinance which provided for the payment to the city of a \$3.00 per quarter city license tax by every physician practicing his profession and having a fixed place of business in Glendora, or a tax of \$1.00 per day on physicians not having an office or residence within the city limits. The ordinance also provided that the city authorities might collect the tax by suit against physicians refusing to pay. Dr. H. H. Chamberlain, of Glendora, decided to fight the matter. The suit begun in the Recorder's Court of Glendora, was transferred, on motion of the physician's counsel, to the Superior Court of Los Angeles County, where the matter was argued on the city's motion for judgment against Dr. Chamberlain. Counsel for defendant argued that the tax was illegal, in that there was no warrant of law for such an ordinance under the California statutes, that the practice of medicine is a profession, and not a business, and that the ordinance was otherwise objectionable as discriminating arbitrarily between physicians having an office in Glendora and physicians not so having an office there, and that therefore the ordinance was unconstitutional as imposing an unreasonable and arbitrary tax.

Judge Finlayson pronounced the ordinance unconstitutional as unreasonable and arbitrarily discriminative in its terms. The general question of whether or not a license tax can be imposed as a prerequisite to the right to practice in a city in this state was not passed upon, as the ordinance was held unconstitutional upon the ground that it was discriminatory and unreasonable.

COUNCIL MEETING.

A meeting of the Council was held on the evening of May 23rd, for the purpose of considering the several matters referred to it by the House of Delegates at the last annual meeting. There were present Drs. C. G. Kenyon, O. D. Hamlin, René Bine, H. A. L. Ryfkogel, J. H. Parkinson, G. H. Aiken, A. W. Hoisholt, Harry M. Sherman and Philip M. Jones. The salary of the Secretary-Editor was fixed at \$5,000 for the year 1914.

A communication from Dr. J. H. Hurst was presented and ordered laid on the table.

The Eye, Ear, Nose and Throat Section was granted a sum not to exceed \$50.00 for legitimate expenses connected with the next annual meeting, all bills to be approved by the auditing committee. The Committee on the Conservation of Vision was granted a sum not to exceed \$10.00 for postage in connection with its work. The deficit incurred by Dr. Tucker in the legislative work of the last session was not assumed by the Council as it was the sense of the Council that the expenses were at no time authorized by the Council.

In the matter of a proposed request to the legislature to pass a law separating the regular school from all other systems of healing and create a separate board of medical examiners, the question was ordered put off to a special meeting to be called for the purpose of discussing this

one question and giving those interested a chance to be heard.

The Council did not endorse the resolutions introduced by Dr. Graves at the closing session of the House of Delegates at the last meeting.

The following resolutions were introduced and on motion laid on the table till the next meeting of the Council for consideration at that time:

Resolved that it be the sense of the Council, that on and after January 1st, 1915, suits for alleged malpractice arising in the course of "Lodge and Contract Practice" (see Council's report, June JOURNAL) be not defended by this Society. Be it further

Resolved, that pending a meeting of the Council, individual cases as they may arise be referred to the Chairman and Secretary for action in order that the rights of members be fully protected.

There being no further business, the Council adjourned.

TAKE A VACATION.

If you have not done it already, do it as soon as you can; take a vacation. Get away from the routine; go somewhere, anywhere, but preferably near the Earth. No one leads such a narrowing life as the physician and no one needs to get completely away from it every once in awhile as does the doctor. He is eternally thinking and talking his shop. When two or three doctors are gathered together, they invariably begin to talk "shop"; they cannot keep away from it, so when you go on your vacation, do not go with another doctor. Any one who does not get away from his own little path in life once in awhile, gets stale; and it is not a good thing for your patients for you to get stale.

A SIGN OF PROGRESS.

It is much more desirable, speaking merely economically, to save the life and restore the health of a satisfactory working unit, than to let that unit drag along in an unfit and unearning condition and die before the allotted years of usefulness have passed. Insurance companies are finding this out and are developing plans and methods for saving lives and not merely waiting around to pay for them when the life has gone out of the insured. On June 20th, the Metropolitan Insurance Company dedicated a tuberculosis sanatorium for its employees at Mt. McGregor, New York. This is a truly encouraging sign of awakened progress and means much more than appears in the mere announcement.

ANOTHER WORD OF APPRECIATION.

A member living in Los Angeles, who was recently one of the defendants in a very bitterly fought suit for damages for alleged malpractice, which suit was defended and won by the legal department of the State Society, writes, in part, as follows:

"It was a great relief when the suit was concluded in our favor. Such a case would make one appreciate the backing of the State Medical Society, if one needed stimulation for

such appreciation. I wish to say further that the attorney for the State Society (in Los Angeles), Mr. Morrow, is, in my opinion, a real lawyer and a fine man, and the Society is fortunate in having his services at its command."

SOME MORE ARGUMENTS.

The last number of the program of the San Francisco County Medical Society presented for the consideration of the members, various arguments pro and con relating to the plan of dealing with industrial accident insurance adopted by the State Society. The first portion merely quotes the report of the Council dealing with this subject which report appeared in the June issue of the JOURNAL:

"The following are the arguments for and against the endorsement of the State Society's resolution, as drawn up by your Secretary to the best of his ability, after a careful consideration of all the evidence submitted at the various meetings and from written objections submitted by members, some of the latter being quoted verbatim as indicated:

I. FOR.

1. It must be remembered that the Boynton Workmen's Compensation, Insurance and Safety Act became effective January 1st, 1914. It is a law creating a condition which must be met.

2. The Industrial Accident Commission takes the stand that fees should be commensurate with the income of the individual and that charges should be made to the injured workman as if he had to pay the bill.

3. Doctors receive 100 per cent. of their fees.

4. The fees average greater than do the usual collections for this sort of work.

5. By the work of the State Society, the Industrial Accident Commission and the various insurance companies recognize the rights of an organized medical profession, in marked contrast to the non-recognition in other States and in Europe.

6. County medical societies will have the right to present a list of physicians who desire or are willing to do this work.

7. With the united profession, it will no doubt be possible for amendments to this Act to be introduced at the proper time.

II. AGAINST.

1. Lowering of fees by the Fee Bill.

2. Men who insist upon higher fees will not be employed.

3. Concentration of work in the hands of a few men.

4. Low fees for men coming under the Act, but who have larger incomes than the average.

5. The insurance companies should furnish malpractice insurance to the men doing the work and this should not be a burden on the State Society.

6. The county society naming men would lead to favoritism and disrupt the Society.

7. The only way to avoid the haggling about fees and to insure the employment of better men would be to substitute a hospital system, with a salaried staff, so that the interests of the hospital, patient, Industrial Commission and insurance companies are one, or to use the already established hospitals for this purpose, with State regulation or supervision.

8. That under the Act the employer has the right to dictate choice of physicians and that the free choice of physicians promised is a delusion and a snare.

9. This state is being 'made an experiment station for freak legislation.'

10. Free choice of physicians does not guaran-

tee to the patient the services of surgeons most competent in this work.

11. County societies have not the legal right to establish fees that will bind all their members.

In reply to the above objections:

I. FOR.

1, 2 and 3 are obvious.

4 is conceded by almost every doctor.

5, 6 and 7 are essential.

II. AGAINST.

1. 'The fee bill we are considering is based upon an average income of one thousand dollars a year. This average includes employees at from three hundred to six thousand dollars a year. The editorial statement in the California State Journal of Medicine, May, 1914, page 168, that "it is a list of minimum fees appropriate for workmen earning not over \$1,000 a year," is absolutely erroneous.

If the fee bill under consideration be adopted, it means the same low standard. The courts will take the fee bill as their standard in estimating the value of services and it will be practically impossible to obtain a judgment against a man having an annual income of six thousand dollars for any greater sum than would be paid by the same man if he came under the liability act. Thus, for instance, a patient comes for diagnosis and treatment and makes three office visits. During this time the physician makes a complete physical examination, including urine, sputum, blood, feces and stomach contents. Are his services only worth \$4.00—\$2.00 for the first visit and \$1.00 each for the other two visits—and that for the man who earns six thousand dollars a year?

There is no reason why the fee bill need be adopted by our Society. Let those members who desire to work under its provisions do so for the class of cases which come under the Liability law. Some of our members have been making life insurance examinations for \$3.00 instead of demanding \$5.00, as advocated by our State Journal, and now we propose to still further reduce our fees.

W. I. T.'

In reply to the above:

'The California State Journal of Medicine is certainly in error if it states that the fee schedule tentatively adopted by the California State Medical Society "is a list of minimum fees appropriate for workmen earning not over \$1,000 a year." The resolutions as prepared for submission to the State Medical Society indicated that the fee schedule would apply to persons of an average yearly income of \$1,000 per year.

The actual average earnings of all the individuals reported as injured from January, 1913, to date, in California, are \$967.00 per year. The highest wage reported for that time of the more than 30,000 accidents was about \$7,500 per year, and the highest paid man availing himself of the privileges of the Boynton Act received \$3,500 per year in salary.

There is nothing to prevent the physician arranging with his patient for fees in excess of the fee schedule when the patient's income is in excess of the \$1,666 adopted by the Boynton Act as the highest figure for purposes of awarding indemnity. Since the law takes cognizance only of a sum less than \$1,666, so may the surgeon consider that his services under the fee schedule apply only to an injured individual with income up to that amount. It is his right to arrange with his patient for an extra fee to be commensurate with his patient's resources, since the Commission takes the stand that its fee schedule is designed to meet a \$1,000 per annum income.

If the fee bill is adopted, why would it be more likely to be accepted by the courts as a standard fee bill than our county medical society fee schedule, which is not accepted by the courts, in some

instances at least? The Industrial Accident Commission states that the fee bill under discussion is for individuals of \$1,000 annual income. If we apply that theory to this same fee schedule, note the result:

Annual Income	*Surgeon's Minimum Fee for Major Operation Only	Extra Hospital Visit Minimum Fee	Extra Office Visit Minimum Fee
\$1,000	\$ 75	\$ 1.50	\$ 1
2,000	150	3.00	2
5,000	375	7.50	5
10,000	750	15.00	10

* Note—This is the bare fee for surgeon. Assistant, anesthetic, etc., are paid extra.

It must not be forgotten, nor the fact ignored, in argument, that the fees shown in the schedule are minimum. More than average dressings command greater fees than shown on the fee bill, as do more than average operative procedures. Consideration of examination of urine, blood, sputum, stomach, etc., do not belong in this discussion because they will very rarely have place in an accident case, and if they do will most certainly be paid for in excess of the scheduled visit rate.

Physical examinations are rarely if ever required, and practically never made, unless asked for by the insurance company, in which event a special request and special arrangement is made and a fee stipulated.

M. R. G."

2. This is absolutely true. Men who do not care to accept the fees do not have to do the work, and it is their privilege to refuse.

3. It is doubtful whether the work will be concentrated in the hands of fewer men than it is at present. Many corporations and business houses have employed physicians in the past to care for their employees, and in a large number of instances the employees act on the advice of their employers in consulting physicians for even ordinary cases of illness. As a matter of fact, from January 1st to May 1st, 1914, approximately 5,000 physicians in this State handled the 14,560 cases reported to the Industrial Accident Commission during that period. While there have been 14,560 accidents under the Boynton Act, about 1,000 of these have been insured in the State Compensation Insurance Fund.

Of these 1,000 cases, only two have required removal of doctor for incompetence.

4. It is true that there are men whose incomes are larger than the average who will come under this Act, but there is also a tremendous number whose incomes are far below the average and from whom physicians would ordinarily have collected nothing. For instance, one company alone handled 443 cases from January 1st to May 1st, 1914, the average fee paid to physicians being \$10 per case. Of this number 200 were trivial and never would have consulted physicians in the first place had it not been for the protection afforded them by law. The average income of those who have come under the Act to date is less than \$1,000.

5. There is no reason why the work done by our members under the Act should be any more liable to malpractice suits than that done in routine practice, for we assume that they will demand the same safeguards (X-rays, etc.) as they would in ordinary practice, and we know that the Industrial Commission and the insurance companies will certainly want this done and will pay for it.

Note—The Industrial Accident Commission requires X-rays filed in all bone cases.

6. The county society would only prepare a list of the men willing to do this work, copies of the same to be given to all interested parties, and there would be no dictation of physicians from this office.

7. The use of hospitals, it is true, may be a step in advance and may yet come. Nevertheless, the Industrial Commission has not seen fit to consider

this plan in the very interests of the profession. If the latter acted on the usual unselfish motives which characterize most of its acts, and sees fit to endorse this plan, there is very little doubt that it can be carried out.

8. The companies have agreed to the free choice of physicians, the Industrial Accident Commission also. It is true that under the act the employers themselves may, if they choose, dictate the choice of physicians. After discussion with many of the large employers of this city, we find that they are all willing to allow cases to go to the family physician, provided the latter be competent; their only interest being to protect the injured and themselves in the matter.

9. There are twenty-nine States where workmen's compensation laws are in effect.

10. The free choice has only been granted because the profession has demanded it.

11. The societies are not trying to—it is up to individuals to accept or reject.

CONCLUSION.

It has been urged that this matter is not one for the county society; that any physician may do this work or not, as he sees fit. This, of course, is true; but if we wish to retain our unity and bring about changes in the Act itself so as to benefit the profession, we must take a stand now.

It must likewise be recognized that workmen's compensation is here to stay; that it is only a matter of time before we shall have sickness insurance, and if we are not prepared to crystallize our views on all of these questions we shall be absolutely helpless to meet these problems."

GEORGE FREDERICK REINHARDT, M. D.

It is sad enough to see any one in the prime of life pass away, but when this happens in the case of a man of unusual and marked constructive ability, one who is adding to the development of good things and to the betterment of conditions affecting the whole people, it is indeed a calamity. It was work of this sort that was being done by Dr. Reinhardt in the University of California, at Berkeley, and his untimely death on the night of June 7th will be felt as a distinct loss to the University for many a long day to come. His work in the creation and development of the students' infirmary marked him as a man above most men and the thing that he created was seen to be good and has been followed in many universities. He was ill but four days and died from a profound infection consequent upon a carbuncle, in spite of every effort to save his life. He was 45 years old and while he had been born in Iowa, nearly all of his life had been spent in California, which he dearly loved. A man of rare common-sense and sound judgment and with a kindly heart and a sympathetic disposition that endeared him to all those with whom he came in contact, his loss will not soon be forgotten. He leaves a widow and two children.

Dr. George Frederick Reinhardt, Professor of Hygiene and University Physician in the University of California, whose development of the Infirmary system in the University, by which complete care was taken of the health of five thousand students, was an achievement memorable in the history of preventive medicine in America, died in the Infirmary on June 7, 1914.

• Dr. Reinhardt's death was accidental in cause, and one of those martyrdoms in which a physician lays down his life in the service of others. For some weeks he had been giving surgical attention daily to a patient who was suffering from a carbuncle. Through some accidental mischance the same streptococcic infection established itself in the physician himself. A serious carbuncle formed, which was operated on at the Infirmary. The strain was, however, so virulent that surgical treatment and medical care were unavailing and after an extremely brief course death resulted. Bacteriological examination at the State Hygienic Laboratory showed the extreme virulence of the infection.

The funeral services were held the morning of June 9 in the garden of the University Infirmary, which stands as an enduring monument to the creator of its very idea. Rev. Albert W. Palmer of the Plymouth Congregational Church of Oakland and President Benj. Ide Wheeler of the University of California were the speakers at the services, which were attended by large delegations from the faculty and from the student body of the University, from various student and medical organizations, and by many hundreds of grateful and devoted friends. There were further services in private at the Oakland Crematory.

Dr. Reinhardt was born in Kansas on June 3, 1869. His boyhood was spent at San Jacinto and elsewhere in Southern California. He received the degree of B.S. from the University of California in 1897, after an undergraduate career in which he had played on the football eleven, served as football manager, and been a leader in student affairs. He then spent three years in the Medical Department of the University of California, receiving his degree of M.D. in 1900. From that time until his death he practiced in Berkeley with much success, and achieved much reputation as a surgeon. In 1900 he was appointed Medical Examiner and in 1903 Professor of Hygiene and University Physician in the University of California.

His most memorable contribution to University life in America was made in 1906, when he prevailed upon the authorities of the University of California to carry out the plan which he had for some time been maturing of establishing an Infirmary system—something theretofore quite without academic precedent. A well-equipped hospital was established on the University campus, and every student, in return for an Infirmary fee of \$3.00 each half year, was given the privilege of all the medical and hospital care that the student might require. A staff of physicians was assembled, a corps of graduate nurses organized, under the superintendency of Miss Ethel Sherman, and a remarkable clinic developed. At the time of Dr. Reinhardt's death the daily average of bed cases had risen to ten, and the daily average of consultations and dispensary treatments to more than a hundred. For medical advice and hospital care there was no charge beyond the Infirmary fee itself. For surgical operations—and some fifty major operations and a large

number of minor operations were performed every year—the student paid a moderate fee which went to the Infirmary fund and not to the surgeon. Dr. Reinhardt and the medical staff were remunerated by the University and there was no element of private gain in their relation to the Infirmary.

The Infirmary system proved a great blessing to the students of the University. What resulted was that students were kept well, instead of being allowed to become sick. Ailments received early attention, and numerous cases that might have involved long illness or death were made of little account by the fact of this early attention. A richly valuable educational part of the system was that the students were taught to take care of their health, to avail themselves of the resources of scientific medicine, and to avoid quacks and patent medicines, using instead competent medical advice.

For a dozen years, too, Dr. Reinhardt lectured twice each week, throughout the first half of the freshman year, to all the men in the freshman class, on the principles of public and personal hygiene. This instruction was exceedingly valuable in teaching the students some understanding of how to safeguard their bodily resources and the obligations of citizens in the way of right relation toward the problems of public health and community sanitation.

At one time Dr. Reinhardt served, most efficiently, as Health Officer of Berkeley. He was for years a member of the State Board of Medical Examiners, and for some time served as its president. In this capacity he made valuable contributions to the cause of proper standards for the practice of medicine in California.

A kindly and generous personality, enthusiastic and untiring in his service to every good public cause, self-sacrificing and unwearying in his service to other men, Dr. Reinhardt was of the noblest type of good citizen and good physician. His great invention of community care for University students has attracted wide attention throughout the country, has already been copied in the University of Michigan and the University of Wisconsin, and is certain to become a prevailing custom throughout the other great universities of the country.

Fitting tribute to his memory was what President Wheeler of the University set down on the night of Dr. Reinhardt's death, as follows:

"He was one of the most efficient, useful, and unselfish men I ever knew. To thousands of the students he has been their best friend. The Students' Infirmary is his creation. He furthermore developed therein the type of the college infirmary which meets the needs and can be maintained. This will be his lasting monument.

"Everyone who worked with him he cheered and stimulated. He gave of himself to every good cause unstintingly and without thought of remuneration. All his thoughts went out toward public service. We could not afford to have him go. On every side are the great gaps he has left. What shall we do without him?"

ORIGINAL ARTICLES

FUNDAMENTALS IN TEACHING SEX HYGIENE.

By JOHN C. HOLLISTER, M. D., Pasadena.

Many references to teaching Sex Hygiene are to be found through recent literature. Books have been published, committee reports and personal articles have appeared in medical and pedagogical journals and in popular magazines. The need for such instruction is now so widely recognized that the question before us is not whether it should be done, but what is the best way to do it.

Most of the plans for introducing the subject into the home and school insist that the facts of human reproduction should be taught to the child by an indirect method. It is almost universally recommended that the child be taught botany or general biology only. The crucial facts of human reproduction he is expected to grasp intuitively. He is thus expected to learn the essentials of human sex hygiene without directly studying them.

This indirect method I believe to be quite wrong, wrong because it does not rest upon what to my mind are the fundamentals of sex education. To go still further—I think any indirect method fails to recognize what these fundamentals are, although when our attention is called to them, we find them particularly simple and self-evident. The fundamentals are not to be found in general biology or nature study; they are not plant or animal reproduction; they are not cells nor evolution nor life itself. They *are* human anatomy and physiology. Any plan that does not recognize the truth of this, any plan that does not rest upon these foundations, is inherently weak. It is unnatural, illogical, and has not a sound psychological basis.

If this be true, and, as will be shown later, there can be no doubt of it, we are forced to conclude that the child should have a satisfactory knowledge of human anatomy and physiology before he can appreciate the matter in sex education. The object of this paper is to call particular attention to this fact.

All authorities on the "Science of Sex," as one editor calls the general subject, base their knowledge upon human anatomy and physiology. That knowledge they could no more gain by exclusive study of botany, than the botanist could learn about plants and flowers if he confined his attention to the study of the human body. Yet that is exactly what most of the methods referred to expect the child to do. For a typical example let us consider the report presented by the special committee at the Fifteenth International Congress on Hygiene, at Washington a year ago.

In the third paragraph we read, "It follows from the above principles that detailed descriptions of external human anatomy are to be limited to what is necessary to make clear and to impress the hygienic bearing of the facts to be taught. In printed books and leaflets cuts illustrating human anatomy should be avoided whenever possible, and if used at all, should be limited to absolutely essential facts, and be conventionalized as much as scien-

tific accuracy will permit." In the fourth paragraph we find the statement—"The purely scientific basis for such instruction must be laid in the biological nature study in elementary schools, and in the more systematic instruction in biology and hygiene in secondary schools and colleges."

General human anatomy and physiology are thus curtailed or denied entirely to the child, and general biology is offered him even up to his college course, as the fundamental basis upon which to build his sex knowledge.

The mistake of such a plan is not that it recommends general biology and nature study; the more biology and nature study the child gets the better. The mistake is that general biology and nature study are *substituted* for general human anatomy and physiology and used as fundamentals, in spite of the fact that human anatomy and physiology are just as purely scientific, and have a far more intimate and natural association with the child's earliest interests. To teach the child the unity of all life is of the greatest importance. Biological unity should always be shown to him clearly for, as soon as he grasps its meaning, his respect for all life will grow strong. But how can he be expected to grasp its significance to him personally unless he knows pretty clearly about himself? He cannot if he is denied knowledge of his own structure and normal functions. The committee's report not only advises placing the cart before the horse, as it seems to me, but goes further than that—it takes away the horse altogether. The child is expected to imagine, and thus learn about, the horse by exclusive observation of the wagon.

The fact that it is possible for such a committee to make such a mistake is clear evidence that, either consciously or subconsciously, they hold individually the same attitude toward certain scientific facts that they tell people not to hold, i. e., they feel ashamed of normal genital anatomy and physiology; or else they believe that there are difficulties or dangers in teaching a child genital anatomy and physiology. If they are ashamed, they have forgotten that the child is *not*. That attitude comes only after he finds out that it is the accepted one among his elders. If they believe there are dangers, they are, my experience has shown me, equally in error.

Other examples advocating the indirect method, are plans offered by Sigmund (quoted by Iwan Bloch in his "Sexual Life of Our Time"), by Bloch himself (*idem*), and by Maria Lischnewska ("Die geschlechtliche Belehrung der Kinder"). These educators believe in substituting natural science for human anatomy as long as possible. Max Euderlin, in an article published in the "Zeitschrift für Bekämpfung der Geschlechtskrankheiten," bd. 4, makes the following statement: "Belehrung über den Bau der menschlichen Geschlechtsorgane und den Vorgang der Zeugung sowie Erörterungen über geschlechtliche Krankheiten sind aus der Volksschule ganz ausgeschlossen."

Even Havelock Ellis, the most scientific, the wisest, the most human writer on sex questions that has yet appeared, says: "There can be no

doubt that botany is of all natural sciences that which best admits of this incidental instruction in the fundamental facts of sex when we are concerned with children below the age of puberty." Again, "In modern times the method of imparting sex knowledge to children by means, in the first place, of botany, has been generally advocated, and from the most diverse quarters." In the same volume Ellis also makes this statement: "There can be no doubt, however, that while in the future the school will most probably be regarded as the proper place to teach the elements of physiology,—the introduction of such reformed teaching is as yet impracticable in many communities" (*Psychology of Sex*, vol. 6, p. 58).

If one could, in the average community, so thoroughly control each child that a systematic course in sex hygiene could be given from infancy up, and if all other sources for such matters could be shut out, then I should believe that the plan to teach botany or zoology first, and postpone human anatomy and physiology until late, might be advisable in certain children, that is, in those whose sex impulse has a tendency to develop *slowly*. I say "slowly" because, as will be shown, teaching botany exclusively is a direct irritant to the child's sex impulses.

Three practical facts show the unwisdom of Ellis' advice. One is that it is impossible to prevent the majority of children in an average community from hearing about sexual matters. Even the very young in most families understand much more of the references to such things overheard at home than their parents think they do. Often, in spite of the utmost care on the part of the parents, the child hears snatches from sex stories told by nurse, or servant, or playmate. He soon learns what they mean.

Another practical fact is that such influences stir up their curiosity about human anatomy and physiology, and not about botany. The third fact is that botany and zoology will not satisfy that curiosity, but instruction in anatomy and physiology *will*. We cannot doubt the value of botany but we can misapply it. The teacher should not forget that, while *his* attention in the class is more or less confined to his plants, the *child's* may be drawn to the distorted human anatomy story he has just heard out in the entry. The child's subconscious call is for the truth about human anatomy, and not for the facts of how flowers are reproduced.

I believe the essentials of the science of sex are human anatomy and physiology, and further, I believe these two subjects should be treated as essentials and taught to the child to-day at an early age.

But is this a practical thing to do? That it is feasible may be shown by discussion of the following four points:

(1) Human anatomy and physiology can be taught successfully to the young child.

(2) The knowledge of normal human anatomy and physiology is particularly advantageous to the child.

(3) There are no important reasons why the

genital system should not be taught as part of general anatomy and physiology.

(4) Such a plan rests upon a sound psychological basis.

(1) One has only to teach a few children general human anatomy and physiology, including the genital system, to be convinced that it is not only possible but peculiarly fitting to do so. This applies to young children, i. e., between 5 and 10. Human anatomy and physiology are the very things that interest them most. They early notice, examine, and like to hear stories about eyes, ears, mouths, toes, and stomachs. The external genitals, the anus, and umbilicus, are equally interesting and in the same purely objective way. The intelligence shown by the average child of either sex, when the human organs are demonstrated by pictures, models, and actual structures, is remarkably keen. The ordinary boy likes to be taught about his own body, a girl no less so if taught early, i. e., before she has learned from the older girls to shudder at that "dreadful anatomy."

The younger the child is, down to four or five years of age, the more naturally and simply he takes in what is given him. Organs, nerve tracts, and human skeletons, he delights in, and, when they are explained intelligibly to him, he has no difficulty in identifying the various structures, and learning their exact names. The spermia, and ovia, and their relations to the formation of a new child, above all please him, and, what pleases him most, he remembers best. He frequently picks up his anatomical pictures in preference to his other picture books. His questions about anatomy and physiology are pertinent. He shows in many ways his eagerness to learn more. Unless it is taught mechanically, he does not tire of anatomy, especially if illustrated, one-half as soon as he does of spelling or figures.

The average parent does not realize this, but that is because he himself does not know his anatomy and physiology, or what he does know he cannot teach. The ignorance shown by many highly intelligent men and women concerning the most common facts of human anatomy and physiology is almost incredible. Especially difficult for the parent is the teaching of genital anatomy, but that is not the child's fault, nor can one blame the genital anatomy. The trouble is the average parent does not know his genital anatomy. He has always been ashamed to learn it even when the door was closed, for the feeling of disgust and aversion is deeply ingrained. What is true of the average parent is also true of the average teacher. It would be unfortunate indeed to have the next generation of parents so hampered when it is so unnecessary. One of the direct causes of the unhappy marriage is ignorance of the anatomy, physiology, and psychology of the genital system. It is quite impossible to expect intelligent and harmonious relations to persist under such conditions.

(2) There are *three special advantages* that come to the child who is early given a child's knowledge of human anatomy and physiology. First, he acquires a profound respect for his whole body. Second, the numerous obscenities he hears at school

or on the street do not disturb him. Third, he has no difficulty in appreciating the significance of what is told him later in his course on sex hygiene.

The respect for his body directly protects his external organs from vicious habits. This influence is specific in that it applies to the genital system more than to any other system, with possibly the exception of the muscle system. The same applies to the girl. She takes added care of her body, chewing her food well, not neglecting regular bowel movements and urination, etc. These are simple matters, but they indicate proof for the point under discussion, and their simplicity or commonness in no way detracts from their importance.

Does the same respect for his body come to the child if he learns only about plants and animals? It *can* not! Let anyone compare two small groups of children to be convinced.

The second advantage is this: We all know how many obscene remarks, references, suggestions, and pictures the child sees and hears in the school yard, school toilet or in the street. These vary in viciousness from a single expression to the secret note with its dire suggestion handed to the little girl by the "tough" boy, or the cherished pornographic card that this same "tough" boy delights in exhibiting behind desk cover or door. The average child's curiosity is particularly stirred by such pictures and notes. More than that, if he happens to be particularly timid and modest, he may be deeply injured, as will be shown later.

This is one of the particular times when it is the aim of the educator to help the child by sex enlightenment, but nearly all educators feel that they can help the child most by letting him fall back upon a knowledge of plant and animal reproduction, when his sex curiosity is thus aroused. To my mind no familiarity with plant and animal reproduction will help him half so much as will knowing about human reproduction, merely for the reason that the tough boy's remarks, and the obscene pictures are not about plants at all, and rarely about animals, but solely about *human* beings. Instinctively we know this to be true.

Let the child, before he sees the picture, or hears the remark, know more about human anatomy than the tough boy knows or the picture shows, and the chances are that his curiosity will become contempt, or, satisfied, will recede far back in his consciousness. Such contempt, or satisfaction of curiosity can not be induced by knowledge of botany even if profound, nor by any other subject but human anatomy and physiology.

The third advantage is this: If the child has already clear ideas of the structures and functions of his body he appreciates at once and without effort the instruction in hygiene that is to be offered him at puberty and later as part of his course in the science of sex. All questions of hygiene have direct reference to women and girls, men and boys; they are not about plants and animals. If it is quite impossible for an educated adult to understand sex hygiene or sex psychology at all unless he has a satisfactory knowledge of human anatomy and physiology, it is absurd to expect the child of

ten or twelve, or even the youth of sixteen to do what the adult cannot do.

(3) The third point of our main discussion refers to the possible objections to the plan I have suggested.

The one objection of importance is the fear that there might be caused a too early development of the sex impulse in the child induced by the very act of teaching these subjects. There is a risk, but it is not a risk that depends upon anything the child thinks, or does, or the attitude he holds. It depends entirely upon the attitude the teacher holds and upon his handling of the subject. If human genital anatomy and physiology are taught as a part of general anatomy and physiology; if the genital system is not unduly emphasized by omission and concealment; if the genital system is not called "bad" and the other systems "good" we need have no fear that the child will become sexually precocious. Certainly not if all this is done before the sex impulse has had time to become strong. The reverse is true. There is no irritant like unsatisfied curiosity. Previous knowledge of the genital system satisfies this curiosity more naturally and specifically than any other kind of knowledge.

To consider it in another way: The child *must* be given some knowledge of his anatomy at puberty if he has not had it before. Does it not stand to reason that the anatomical pictures and physiological facts will have a far greater tendency to stimulate his sex impulses at the time when he already has his brain confused and agitated by the new and strange sex emotions that come from within and are entirely unavoidable, than it would before this emotional life had begun?

I do not advise attempting to explain to the child the psychology of the subject. He would not understand it if one did. Pathology, what he needs of it, had best come later when it will help him most. Perversions to a still later period, for they disturb through fear or sympathy. But knowledge of normal human anatomy is not a sexual stimulant. It acts more like a sedative. It is one of the most effective sex-impulse sedatives that we have. It is about the only direct one that we may use for children. There are effective sedatives other than this, but they are more indirect in action, as we shall see. Because the exact knowledge does act as a sedative, and thus tends to postpone the sex-impulse development, it should be given to the child and given in time. An acquired habit of taking such a sedative is by no means deleterious.

Occasionally we hear a further objection raised. This is that there are so few teachers and almost no parents that are able to teach the anatomy and physiology. That again is no fault of the child, nor does it argue that such a condition should persist indefinitely. The situation may be met practically by the school's assuming full responsibility for these subjects. If there is a dearth of teachers at first, the demand will soon call forth a supply. Another generation or two and parents *will* be able to teach their children and will not be ashamed to do so.

(4) The fourth and last point to be discussed

is whether or not we can place our ideas upon a firm psychological basis. Various well-known authorities upon the mental development of the child, and writers upon general psychology, have been read or consulted personally. A satisfactory amount of evidence was not hard to find. One answer that came to a personal letter I shall add to the end of the article.

In the first place I will quote a sentence from Wm. James. In his "Talks on Psychology" he says: "Theoretical curiosity about the rational relations between things can hardly be said to awake at all until adolescence is reached." Generally speaking, then, it is difficult for a child to take in much of any subject by intuition unless he is much older than the age under consideration. This argues directly for the fact that teaching human reproduction by means of plant and animal reproduction cannot at best be very satisfactory. It also corresponds to Herbert Spencer's law that we must begin with a child by teaching concretely; abstractly not until later.

Secondly, it might be well to emphasize the safety of our plan to teach a child his anatomy before he is eight years of age.

According to Moll, Ellis, and Sanford Bell, a child's sex instinct becomes conscious but very rarely before eight years of age. As Freud has so clearly shown in his papers on sex theories, the child may show even from infancy sex manifestations of various sorts, but they are subconscious. As a rule he is ten, or twelve, or fourteen, before he associates the subjective and objective sides of his sex development. Moll says: "The undifferentiated stage may begin at five, or possibly before, but more commonly later, not infrequently at the age of nine or ten. Ordinarily, however, the differentiation of the impulse becomes manifest at a later age—between the ages of fifteen and seventeen." Sanford Bell (*Am. Jour. of Psychol.*, July, '02), places the beginning of the second phase of child love at eight to twelve, to fourteen, when the infantile lack of self-consciousness changes.

On looking over the ten case histories Ellis gives (at the end of one of the volumes of "Psychology of Sex"), eight of which are of normal individuals, "one abnormal, one slightly so," I found that on the average, interest in sex matters began at nine years of age. The plan may be considered safe then, if the above figures are to be considered correct.

Thirdly, the change of method suggested would fit in nicely with what we know of instincts and their control by habits. As James so clearly shows in his "Principles of Psychology," there appears in every child a series of instincts more or less powerful, more or less useful, more or less essential. According to our notions of what is suitable many instincts are considered advantageous, many detrimental, to the child's welfare, i. e., sympathy, courage, constructiveness are encouraged, while fear, shyness, or jealousy, are discouraged. Then there are instincts of great value but cannot be allowed to develop uncontrolled. The instinct of propagation is of one of the last. It runs all powerful throughout all lower life. Plants

and animals are completely under its control and follow its promptings as a matter of course. The human animal would do the same unless if he did not differ from the lower animal by having an intellect, and by allowing his intellect to control the primitive instincts. The woman's movement, and the great child's movement, have at their very centers control of the sex instinct by intelligence. The child must learn this control. That is why sex hygiene is given to children at all.

Among the ways of influencing the sex impulse is one of special importance. It is the *control of instinct by habit*. A further quotation from James will indicate what is meant. In his "Principles of Psychology," Vol. II, page 349, he says: "When objects of a certain class elicit from an animal a certain sort of reaction, it often happens that the animal becomes partial to the first specimen of the class on which it has reacted, and will not afterwards react to any other specimen." Then he says: "A habit once grafted on an instinctive tendency, restricts the range of the tendency itself, and keeps us from reacting on any other but the habitual object, although others might as well have been chosen had they been first comers."

E. N. Henderson in "Principles of Education," has the same ideas but puts them in a somewhat different fashion. On page 103 he says: "When one becomes accustomed to react towards objects in a certain way the instinctive tendency to react differently will, if it appears later, very likely be inhibited." Then on page 105 Henderson says: "We have then the following phases in the control of emotion: (1) the substitution of contrary emotions habitually associated with its instinctive stimuli, (2) the substitution of habitual expressions for instinctive ones, (3) the inhibition of some instinctive expressions by emotions which they are trained to rouse. Under these conditions we may suppose that no emergency will excite a certain emotion unless in the nature of the case the vigorous effort that will hereby be stimulated is necessary. In that event, the first effect of the emotion will be a mild intellectual excitement with habitual activity under conscious control. Here emotion favors concentration of attention, presence of mind."

Now, if we apply these rules of psychology to the question we are talking about, it seems to me that the child would have not only a more natural control of his sex impulses, but a far more effective one, if he consciously or subconsciously referred, by a fixed habit, all new ideas stirring up his sex curiosity or instinct, at once back to the true knowledge of human anatomy and physiology he has already firmly placed on a solid foundation; yes, far more effective, than he would have were he obliged to refer them merely to a knowledge of plant or animal reproduction. The latter resembles the former in but the most general biological way. The latter would fail entirely to satisfy his curiosity, but even if it did not, it would refer him to conditions where the sex impulse runs wild with no effort at control. If the child could reason, as they expect him to, and draw his lessons from the

plant, would he not be placed directly upon dangerous ground! Here is where the true risk lies!

We feel at once how satisfactory the plan suggested would be to the child, how much real help it would give him. The plan of learning botany might lead to exactly the thing we are trying to avoid, namely, obedience of the child to the instinct. This fact alone is sufficient for an entire change of opinion by those advocating indirect methods. They *must* be wrong, and their plan must be doing harm constantly! Our common sense, the final judge of good pedagogy, tells us too which plan is the right one.

Fourthly and lastly, I wish to make one more quotation from James. On page 401 (*idem.*), we find: "Sexual passion expires after a protracted reign, but it is well known that its peculiar manifestations in a given individual depend almost entirely upon the habits he may form during the early period of its activity." This makes the proper management of the child's early sexual life of the highest necessity. It harmonizes with what Freud considers one of the causes of perversions. Freud argues that such abnormalities are to a large extent due to what he terms "wounds in the child's subconsciousness." Such "wounds" are caused by bad habits. Good sex habits are thus again found particularly desirable in as much as bad ones give rise to sexual disturbances that are serious and that may persist all through life. Good sex habits for a child are: respect for his body; respect for his genital organs; ambition to be clean, well, and strong; desire to be master of himself. Bad sex habits are: feeling of disgust in regard to his genital organs; enjoyment of obscenity; morbid interest in sex matters; onanism.

Now, to go back to our main subject, would not a simple but clear understanding of the way human sex structures are built, and what they are for, count more on the side of good habit-formation, than even a very complete knowledge of the sex cells of plants? The risk of wounding would, with no question of a doubt, be much less with the first. How vital it is then for natural, strong, intelligent habits to be engrafted early, so that the child may carry them all his life! If they are not natural, and intelligent, they will be careless and therefore vicious.

We are right then in saying that our plan is well founded psychologically, and also is in harmony with good pedagogical principles.

It might seem fitting to indicate here a practical plan for introducing the subject into the schools based upon the suggestions offered, but that would make the paper too long. Such a plan will soon be published by itself.

In conclusion of the paper, therefore, I feel justified in saying:

(1) The fundamentals of the whole subject of the science of sex are human anatomy and physiology.

(2) Direct and early teaching of human anatomy and physiology to the child is feasible and definitely advantageous, carries with it no valid objections, and is therefore highly desirable.

(3) The plan suggested in this paper has a firm psychological basis, and rests upon good pedagogy.

(4) Any method of teaching sex hygiene to children and youth that recommends the facts of human reproduction to be taught indirectly is not only defective, but it directly opposes the formation of the best sex habits, lessens the child's ability to control his sex impulses, and, finally, adds to his chances for some later perversion.

"Eugenics occupies the center of human interest to-day. All other subjects are mere satellites swinging about this interesting problem. In order to throw any light on this subject, it will be necessary to compare the two distinct groups in biology, the instinctive and the rational.

"In the instinctive group are placed botany and zoology. The habits in plant life are not only a matter of instinct—fixed and mechanical—but they have not the power of mobility. In this sub group there are male and female, yet propagation is not brought about by the sex relations as we understand them in the human family.

"In zoology the habits are just as fixed, just as mechanical, so far as all appearances and purposes are concerned, just as purely instinctive as in the group of botany, except that mobility is included in this group. The moment the beetle, the ant, and the bee, which stand at the head of the insect group as the highest types of instinct, are ushered into life, they enter their work without instruction, manifesting absolutely the same habits in their youth that they do in their old age. Animal life, like insect and botanical, has its habits fixed in a permanent groove. The periods of sex relations are fixed, there are none of the higher habits of wedlock, no psycho-physiological discriminations in the intermarriage of relatives. These groups are actuated in all their habits by the instinctive law of natural selection.

"Standing at the head of biology is the anthropological group, the members of which are recognized as superiors only in so far as they can master or utilize their instincts by the application of will through the medium of rationalism. The fighting instinct illustrates this. Although both have the fighting instinct, the civilized man is superior because he has studied tactics, has modern implements of warfare, and has learned the difference between bravery and courage. In other words, he annihilates the savage because he has rationalized his fighting instinct through training and study.

"Take the instinct of self-preservation. Of two groups in an epidemic the one relying upon instinct would not preserve life as long as the one that has studied about infections.

"Take the instinct of the preservation of others. It is the man upon the bridge of the ship to whom the passengers and crew turn in case of emergency, not because they depend upon his instinct, for they have that equally, but because they depend upon his rational act for preservation. It is proverbial that a crisis in a nation must either bring forth leaders that are equal to that crisis or the nation must perish. It is quite true that the law of self-preservation, relatively speaking, is primal, and the law of preservation of others is secondary, yet in whatever field, or in whatever circumstances they may be expressed, they are carried to their highest fruition not through instinct, but through rationalism. Rationalizing these instincts has been brought about by direct study and not through analogy.

It is the fact that he is assailed by the psychic current of the superior people that annihilates the aborigine. He is moved through the line of least resistance when his curiosity is aroused. He has not the necessary rationalism to sustain himself (Le Bon, "The Crowd," and Ross, "Social Psychology").

The savage is analogous to the boy with no defi-

nite knowledge of physiology. This boy, like the savage, is left in the field of curiosity and feeling subject to the vicious tendencies of the mob. The mob tendency indicates a morbid field. There is little or no resistance."

Personal letter from LORAN S. WALKER of Los Angeles, California.

TREATMENT OF GENERAL PARALYSIS OF THE INSANE.*

By C. W. MACK, M. D., Assistant Physician,
Agnews State Hospital, Agnews, Calif.

Psychiatrists have long looked upon general paralysis of the insane as incurable. When supplied with such facts as the duration and character of the onset in a given case, they could almost predict the time of fatal termination. In the hospitals for the insane these patients rapidly pass from the receiving service to the infirm wards where they go through the stage of slow dissolution as paralysis ensues and the mind loses all but a faint trace of former activity. To see a person in the prime of life suddenly stricken with this disease should call forth our best endeavors to arrest its progress. The utter helplessness of these cases and the limited means at our disposal almost checks our enthusiasm, but, thanks to diligent workers, the outlook for the future is more encouraging.

Paresis furnishes a large percentage of the admissions to hospitals for the insane. The writer has not had access to complete statistics, but has referred to the biennial reports of Michigan institutions on account of having some familiarity with the work done in that state. During the two years ending June 30th, 1912, there were 2580 admissions to the four Michigan asylums, and of these 8.8% were cases of paresis. These figures are fairly correct because most of the diagnoses are made upon laboratory findings. Dr. Christian, in the report of the Pontiac State Hospital, gives a somewhat higher percentage for the institution, and states that the percentage of cases of paresis admitted has more than doubled in the last ten years. Also in the same institution this disease is responsible for the greatest number of deaths. Further investigation is necessary before concluding that the disease is becoming more prevalent. The figures given, however, convince one that it is of considerable importance, and a search should be made for some efficient method of treatment.

The pathology is quite well known to the members of the society, but a few brief statements may not be amiss in order to appreciate more fully the therapeutical principles. The disease involves the spinal cord, brain substance and the meninges. It is a diffuse, destructive process resulting in a grave alteration of the cellular structure of the brain. The pia shows a chronic inflammatory reaction with adhesions to the cortex; the neurones undergo degenerative changes, eventually being destroyed and replaced by proliferation of the neuroglia; the blood vessel walls are thickened and the perilymph spaces packed with lymph cells and plasma cells. The greatest alteration of the

cortical cells is in the neighborhood of the blood vessels.

The lesions in the central nervous system have been ascribed to the toxins of early syphilis and not considered an active syphilitic process. Recently, Noguchi and others have found the *spirocheta pallida* in the cortex of dementia paralytica, both post-mortem and by brain puncture. It is quite possible that these organisms are able to invade the brain because of the injury produced by the long standing infection, but even so, the presence of the spirochetes in the cortex is responsible for the inflammatory reaction producing the clinical picture of paresis. The spirochetes are found deep in the cortical substance away from the blood vessels, making it difficult to reach them through the blood stream, on account of the cellular infiltration of the blood vessel walls. If there was some way to increase the permeability of this barrier so that bactericidal substances could come in contact with the spirochetes, the solution of the problem would be easier.

The constitutional treatment deserves mention before describing specific therapy. The pathology of the disease makes evident the fact that it is a grave toxemia if not a direct infectious disease. Not only the brain but the other viscera show the effects of the toxic process. Patients afflicted with such a condition require special treatment with attention directed to raise the bodily resistance just as much as cases of typhoid fever. The toxemia is indicated by the muscular weakness and nervous symptoms which in the early stages often lead to the diagnosis of neurasthenia. There is need for the restful life, careful nursing and daily medical attention to conserve the recuperative powers, and this can only be insured by institutional care. The startling mental features in these cases usually force upon the friends the necessity of commitment, but unfortunately oftentimes not until the disease is well advanced. The damage to the brain has occurred before the physician has an opportunity to prevent it in the early stages. Is it not possible that institutional physicians too hastily relegate these cases to the background of incurables where they receive only routine treatment? A paralytic, apparently undergoing rapid decline, will sometimes improve, gain in strength and show a return of normal mental life lasting a number of months. Such remissions are not uncommon and surely indicate that under some conditions the reparative processes of the body are capable of arresting, temporarily at least, the destructive lesions. The proper use of resources at our command can aid nature in bringing about a greater degree of resistance if careful attention is paid to the constitutional treatment of these patients.

The advent of the Wassermann reaction has demonstrated the relationship between syphilis and paresis and the finding of the *spirocheta pallida* in the brain gives an indication for specific therapy. Thus far mercury and potassium iodid have had no influence upon the disease, and permanent results have not been obtained with salvarsan given intravenously. This failure can probably be ex-

* Read before the Santa Clara County Medical Society, February 4, 1914.

plained in the light of the pathology of the disease. The blood vessel walls do not permit the passage of medicinal agents or antibodies into the cortex. It has been shown also that substances introduced into the blood stream do not reach the cerebrospinal fluid. This has led to the use of the cerebrospinal fluid as a medium to convey the curative agent to the seat of the disease; or in other words, subdural injections.

Swift and Ellis, in 1912, introduced the intraspinal injection of salvarsanized serum in the treatment of tabes and its use has been extended to paresis and syphilitic brain disease. The method in brief is as follows: One hour after the intravenous injection of salvarsan, blood is withdrawn from which 12 cc. of serum is collected. This is diluted to 30 cc. with normal salt solution, heated for one-half hour at 56° C., and then injected subdurally between the third and fourth lumbar vertebra. The serum is injected by gravity after the withdrawal of an equal amount of cerebrospinal fluid. These injections are repeated at intervals of two weeks. This procedure has brought forth favorable reports from several sources. As yet, however, enough time has not elapsed to determine its true value, but the results obtained are very promising.

It will be interesting to know the mode of action of the salvarsanized serum when injected subdurally. There are several factors to be considered. The salvarsan itself and the serum with its antibodies, complement and protein splitting ferments. All of these come in contact with the pia, if not absorbed into the cortical substance. Heating at 56° C. probably inactivates the ferments and complement. As for the germicidal action of the salvarsan, it can be said that the original dose given intravenously is very much diluted. The 12 cc. of serum represents but a small part of the total quantity, and this is again diluted when injected into the cerebrospinal fluid. Even with this high dilution, it may be able to destroy the spirochetes. Ehrlich's original assertion was that salvarsan had a chemical affinity for the spirochetes, causing their destruction. The effect of the salvarsanized serum may be due to substances formed in the blood serum and not to the salvarsan itself. The salvarsan in the blood could inactivate the organisms in some other part of the body so that protective ferments would be formed for their parenteral digestion. These immune bodies would then be found in the blood stream, and their injection into the cerebrospinal fluid would be the same as producing the passive immunity by antitoxin. Blood serum without salvarsan is not efficacious. This is proven by a comparison of series of cases under treatment with two cases treated with heated and unheated serum alone. The two controls showed no change aside from what might be expected during the ordinary course of events.

The administration of salvarsanized serum was begun at the Agnews State Hospital four months ago. Twelve cases are now under treatment, making a total of thirty-five injections. The first few cases received 40% serum, while a 50% serum

has been used with the later ones—going on the supposition that if a little medicine is good more is better. This increased dosage has produced no ill effects and in one case brought about a prompt drop in the cell count; in fact, the lowest in the series. Some of the early cases have shown enough improvement to deserve comment. One has been discharged very much improved and another sufficiently improved to be paroled, and a third case is much better mentally.

Although all of the cases have not shown a better mental condition since the treatment, there have been changes in the cerebrospinal fluid which are very encouraging. The cell count and the albumen content are a good index of the inflammatory process and give us a means to check up the results. In every instance there has been a pronounced drop in the cell count and in three cases it has returned to normal. At the same time there has been a decrease in the amount of albumen in the fluid. The Wassermann reactions have been made normal in only two cases, but this reaction may be influenced by further treatment.

It cannot be expected that any method of treatment will restore a brain whose cellular elements have been damaged and lost any more than the cavities in a tubercular lung can be replaced with normal lung tissue. If the disease process could be arrested there would still remain some mental defect. The treatment of these cases in the early stages is necessary to obtain the best results. No progress can be made until the disease is studied in the early stages, and this must be left largely to the general practitioner, as these cases are usually not referred to hospitals for the insane until every other means has been exhausted. Now that laboratory methods of diagnosis have been perfected it is comparatively easy to recognize paresis. The differential diagnosis between paresis and cerebrospinal syphilis is difficult and cannot be made upon the laboratory findings alone, but the indications for treatment would be much the same in each case.

The writer does not believe that a too radical statement is made when it is said that every patient with mental trouble should have a cerebrospinal fluid examination. The Wassermann blood examination is not sufficient as a somatic syphilis may be present with any form of mental trouble without syphilitic involvement of the nervous tissues. The cerebrospinal fluid very early gives an indication of the invasion of the central nervous system by the syphilitic process and may be discovered before the advent of mental or neurological symptoms.

The value of lumbar puncture is strikingly revealed by a case now under observation. A boy, twenty-one years of age, with a history of a chancre two years ago, and a mental disturbance extending over four years, came to the hospital in a state of maniacal elation. There was a flight of ideas, distractibility of attention and motor restlessness. These, with a history of recurrent attacks, would lead one to believe that we were dealing with manic depressive insanity, and that

syphilis was only incidental. A lumbar puncture disclosed a high cell count and a positive Wassermann reaction in the fluid. It may be an organic brain disease added to a functional psychosis, but without the fluid examination, the luetic involvement of the central nervous system would have passed unnoticed.

Some mention should be made of prophylaxis. The surest way to prevent general paralysis of the insane is to cure syphilis during the primary or secondary stage. With the refinements in laboratory diagnoses an involvement of the central nervous system during the secondary state of syphilis can be detected in a certain percentage of cases. When this occurs the organisms may only damage the nervous tissues without setting up an active syphilitic brain disease, but the tissues have become predisposed to the infection and it may light up again after a number of years in the form of paresis. If every case of syphilis could be treated thoroughly and followed up with cerebrospinal fluid examinations, this complication might be prevented. Those cases showing positive fluids could be given more intensive treatment. If salvarsanized serum is proven to be beneficial in combating syphilis of the central nervous system, this method could be resorted to whenever the fluid shows a positive reaction. Such cases could also report for lumbar puncture, and be given special directions in regard to the life they should lead to prevent the inception of syphilitic brain disease. There is reason to believe that alcohol is particularly injurious, and, not only makes the treatment of syphilis difficult, but renders the individual more liable to the cerebral manifestations of the disease.

The writer has attempted to give a résumé of the present status of the treatment of general paralysis of the insane without any claim, however, for completeness. Inasmuch as the disease is really a late manifestation of luetic infection, the future history of primary and secondary syphilis treated with salvarsan will be awaited with interest. If it does not bring about the desired result, let us hope that further studies of the pathology, immunity reactions and activities of blood ferments will reveal some way to meet these complications when they arise. The employment of salvarsanized serum may not satisfy all requirements, but, at least, it opens the way for further investigation.

ON THE SWIFT-ELLIS TREATMENT OF CEREBRO-SPINAL SYPHILIS.*

By PHILIP KING BROWN, M. D., and W. T. CUMMINS, M. D., San Francisco.

Neither mercury and iodide nor salvarsan intravenously have succeeded in bringing dependably satisfactory results in the treatment of certain syphilitic lesions of the central nervous system and especially not in the parasyphilitic states of tabes and paresis. The growing knowledge of how small an amount of any curative agent as administered ordinarily is excreted into the cerebrospinal fluid,¹⁵ and the brilliant results from the use

of anti-meningitis serum applied locally, make it reasonable that a furtherance of the intra-spinal method may produce satisfactory results in cases of syphilis of the central nervous system resisting ordinary treatment. The spirocheticidal action of salvarsan and the blood serum of recently salvarsanized patients has been demonstrated.

Meirowsky and Hartmann¹ showed that such blood serum had definite therapeutic value when used subcutaneously in patients with lues. Swift and Ellis show^{2,3} spirocheticidal action of such serum on the spirochetes of relapsing fever, and they also call attention to the highly irritating effect of even small doses (0.1 of a milligram of salvarsan or neosalvarsan) injected into the spinal canals of monkeys. Wechselmann⁴ produced convulsions, paralysis and death in two to four days in rabbits and dogs injected intraspinaly with 1 mg. of salvarsan.

Plant⁵ refers to the spirocheticidal action of the milk of women treated with 606, but regards the benefit to the children to be due rather to the transfer of immune bodies and warns against hoping for cure except by use of the remedy directly. He also reports favorable improvement of cases of tabes, syphilitic paralysis, etc., from subcutaneous injection of salvarsanized serum.

Gibbs and Calthrop⁶ report the favorable result of five or six subcutaneous injections given five days apart, of ten to twenty c.c. of serum from a cantharides blister of patients treated four days before with salvarsan 0.4 gm. intravenously. The lessened Wassermann and general improvement were equal to their experience in cases treated directly.

Gondor⁷ reports spirocheticidal action of salvarsanized rats' blood on spirochetes of relapsing fever.

Castelli⁸ shows similar action of dilute neosalvarsan on various spirochete.

This establishes definitely the fact that the salvarsanized serum is certainly efficient and suggests the danger of even minute doses of the drug itself injected intraspinaly. Reports, however, of the danger of this latter method are still conflicting, but a general deduction may be made from Swift and Ellis' report of experiments on monkeys, as well as authentic reports of trials on human beings, that the method of direct injection of the drug is very dangerous. Wolfsohn in a personal communication reported .007 gm., or about 1-100 of an ordinary dose of 606, administered intraspinaly at the Johns Hopkins Hospital with death of the patient after two days of great agony. The cord was edematous and the meninges deeply injected. Swift and Ellis⁹ report a case of tabes injected with minute doses of 914 with temporary retention of urine and severe lightning pains. Wechselmann reports¹⁰ injecting neosalvarsan intraspinaly in two paretic adults and two congenitally luetic children with no bad results. One of the paretics got .003 neosalvarsan at the first injection and .001 at the second injection two weeks later. The other paretic got .005 of neosalvarsan also with no bad effect. The children got from .001 to .0015 and they, too, suffered no reaction.

Marinesco¹¹ on the other hand reports using

* Read before the Fresno County Medical Society.

intraspinaly .005 in 4cc of solution in thirteen patients. Ten had immediate severe symptoms and eight had prolonged bladder trouble with incontinence or retention, three had weakness of the extremities and one had anesthesia of buttocks, legs and rectum. In cases of cerebral lues treated intraspinaly with serum from other patients after salvarsan injection some improvement resulted. Robertson¹² attempted the treatment in paresis with the serum of luetic patients who had received salvarsan three days previous to the withdrawal, also with serum from the patient himself withdrawn one hour after intravenous injection of salvarsan. Some improvement was noted. Swift and Ellis¹³ report the results of a two years' experience with a series of cases selected from groups under this treatment. Their technic consists in administering salvarsan intravenously, withdrawing 40cc of blood one hour later directly into bottle shaped centrifugal tubes and centrifugalizing after coagulation has taken place. The following day 12cc of clear serum is removed by pipette diluted with 18cc of sterile salt solution, the whole heated to 56° C. for one-half hour in a water bath to increase the spirocheticidal action³ and destroy the inhibitory substance contained in normal unheated serum. After lumbar puncture and the withdrawal of cerebro-spinal fluid until the pressure is reduced to 30 mm. the warm serum is introduced into the subarachnoid space by attaching a funnel and tube to the needle already introduced into the spinal canal. They call attention to the frequency of a certain amount of pain beginning a few hours after injection, especially in tabetics. For this pain they recommend phenacetin and codein or morphin if necessary. Our experience teaches us that the technic is not easy or devoid of the likelihood of complications, but of this we shall speak later. Their report includes ten selected cases—eight of tabes dorsalis, one cerebro-spinal syphilis and one tertiary syphilitic meningitis (radiculitis). Some were treated with their own salvarsanized serum and some with serum from other patients. The number of injections varied from four to fifteen, generally given two weeks apart, and with serum after the intravenous injection of 0.2-0.5 gm. of salvarsan or slightly larger average doses of neosalvarsan (0.6-0.9 gm.). There was no special improvement in one of the tabes cases or in the meningitis case but a general disappearance of the pleocytosis and Wassermann reaction in the cerebro-spinal fluid and a marked improvement in pains and gait in the others.

Boggs and Snowden¹⁴ report tabes cases treated by this method, modified only by the use of full doses of salvarsan or neosalvarsan in each case, and by injecting the serum undiluted. Their most constant result was the disappearance of the lightning pains and sensory disturbances. The effect on locomotion was slower but definite. They ascribe some advantage to use of undiluted serum and large doses of salvarsan.

Our experience has been with a series of cases representing a varied range of syphilitic disorders, one hemiplegia, three tabes (two preataxic), one ataxic paraplegia (cerebrospinal lues), one myelitis

and two cerebro-spinal syphilis. In addition a spastic paraplegia with sensory disturbance was given an intraspinal treatment by the interne through a misunderstanding. The case is mentioned because of the entire absence of findings of syphilis in blood and spinal fluid (cell count 0) and yet the remarkable relief of the pain and spasticity for weeks after the treatment. We have dealt successfully with a large group of hemiplegias in syphilitics with pleocytosis and positive Wassermann in the cerebro-spinal fluid; but all, except the one included in the group reported upon, had never received any treatment for the syphilis at all and the improvement could not be made to speak comparatively for the special efficiency of the Swift-Ellis method. All the others had been treated at some time with mercury, iodides and 606, but were permanently invalidated by their infirmities except one preataxic tabetic whose crises were his chief complaint. One of the other tabetics was a woman with so marked an ataxia and such severe pain that she was bedridden and had been uninfluenced by four intravenous salvarsan injections and a course of mercury and iodide. The remaining tabetic had a bad Charcot joint and very marked analgesia, especially in his legs. The following brief histories and summaries will show the results of the treatment:

(1) Syphilitic hemiplegia—Philip N., age 29, an inmate of the hospital two years; complains of complete right-sided hemiplegia for two years, during all of which time he was confined to bed.

Examination shows no apparent anesthesia. Reflexes on right increased. Left inguinal lymph gland enlargement. Babinski right side. Pupils equal and react to light and accommodation. Tongue protrudes to right. Slight tremor. Paralysis of right pharyngeal wall. Complete motor and sensory aphasia for months after entrance. Had learned to copy printing and to recognize a few objects. Could say yes and no and could swear proficently. On entrance he had had repeated courses of mercury by inunction or hypodermically. Wassermann blood ++. Cell count 108. Noguchi +. Nonne +. C. S. Fluid +++++.

As the patient had had off and on for two years treatment with mercury and iodide and several injections of 606 with no benefit and apparently not influencing at all the Wassermann reaction on his cerebral spinal fluid, he was given the Swift-Ellis treatment. A full dose the first time very markedly depressed him for twenty-six hours, but he required nothing for pain. Within a few days there was a striking improvement and in a week he was walking with a crutch. A second treatment one week later produced no disturbing reaction and the efforts at retraining him in the hopes of overcoming some of his aphasia repeatedly failed in before, produced now very marked results. While the outlook is not brilliant the fact that his cerebral spinal fluid is still positive gives us a hope that further treatment may improve him still more. The improvement has already removed him from the class of total dependents, as he is able to care for himself.

Case 2—Preataxic tabes with Charcot joints; denies lues: A. B., age 63, complains of lightning pains; awkward gait; injury to ankle on August 31, 1913; was painless, but (Charcot joint) showed marked deformity.

Examination shows analgesia and diminished sensation to heat and cold. Argyle R. pupils. No crises. No ptosis. No knee jerk. Marked Romberg. Lightning pains. Bladder crises. No ataxia. On September 25th Wassermann blood —; C. S.

F. ++. Cell count 32, October 7th. C. S. F. ++. Swift-Ellis treatment 30 c. c. 40% serum. No pain from it. October 10 C. S. F. ++++. Nonne —. Butyric acid —. Cells 3.

Swift-Ellis treatment was accompanied by no reaction whatever on two occasions. The Wassermann on the spinal fluid was increased positive after the first injection. The cell count fell from 32 to 3. A further painless fracture occurred on his alighting from a car and the necessity of his lying on his back has prevented further treatment. The case is interesting on account of the possibility of showing an arrest of the trouble. In the meantime there is gain in sensation and the crises are fewer and less severe.

Case 3—Preataxic tabes dorsalis; lues when 24; I. B.; age 68.

Complains of four years of progress of dim vision, unsteady gait, pain in spine and extremities. Examination shows no very definite Romberg. No Argle Robertson pupils. No change in knee jerks. No incoordination. No girdle sensation. No lightning pains. No crises. Absent ankle jerks. Relative analgesia. Unequal pupils. Cells 14. Wassermann C. S. F. ++. Wassermann blood —. He has been taking medicine from Stanford medical clinic for two months.

The patient was referred from the clinic to us in fairly good health, although he had tuberculosis of the lungs. He had a tremendous reaction after the intravenous injection of 606 and apparently developed a pneumonia from exposure while he was perspiring. This was not recognized by the interne and his chill was supposed to be from the 606 injection, so that an intraspinal injection was made on the following day. The patient died three days later with pneumonia. The autopsy by Dr. Ophüls revealed the fact that the spinal canal was bacteria free and showed no signs of irritation. The case was specially important as indicating the care with which the patient should be watched and dealt with following any severe reaction such as occurred in this case.

Case 4—Tabes with marked ataxia: Mrs. R., age 46, complains of lues 20 years ago. Tabes of eight years' standing with distressing pains. Marked incoordination of the lower extremities obliging her to use two crutches. Four intravenous injections of 606 brought about no improvement. Patient almost bedridden. Two Swift-Ellis treatments were given, with apparently little discomfort and with marked improvement in the lightning pains and gait so that the patient could walk a little without crutches.

Case 5—Syphilis, cerebrospinal ataxic paraplegia: F. B., age 30, occupation clerk. Complaint, patient got a chancre in August, 1908. About one month after appeared a copper colored eruption, then in about three weeks mucous plaques in mouth. Hair started to fall out and he became very bald. Finger nails and toe nails were also affected. Mucous plaques disappeared as did also the eruption with the use of mercury and a mouth wash. About four months after the chancre the patient fell out of a chair, paralyzed in all his limbs. The next day he noticed he had no control of his bowels. At only one time, however, was control lost of his urination. Patient lost fifty pounds in about two months. He could only walk in a staggering manner and would fall down after a few steps if not supported. For about three weeks patient was unable to speak, then became able to speak with difficulty. Became very emotional after the paralytic attack. Every night after the attack had two or three "night emissions" (patient states that for about one year before the paralytic attack he had "sexual intercourse" three or four times a night nearly every night). The night emissions were relieved after two months by the use of bromides. Patient claims that if he stops the use of bromide for even one night he gets a "night emission." For about two months after the paralysis the patient was confined to bed, then got

up, but would stagger around the room and felt as he walked that he was walking on glass. He had very bad headaches, which were relieved with medicine (mercury and iodide). He never had any dizziness and no pains elsewhere than in the head. Still has poor control of bowels, but has frequent attacks of diarrhea. Since the use of drugs patient says speech has greatly improved and he is not so emotional. Walking has improved, but he still feels as though he were walking on glass. Chief complaint is partial paralysis and staggering. No shooting pains down legs, no girdle sensation, no dizziness. Poor control of bowels. Appetite good.

Family history, negative; past history, had gonorrhea eight or ten times, also gonorrheal rheumatism.

Examination—Eyes—Normal reaction to light and accommodation; tongue and mouth normal. Heart—Action accelerated, but sounds normal. Skin—A few scattered papules and vesicles; nothing diagnostic of lues. Lymph glands—Post cervical, inguinal and submaxillary glands palpable. Superficial reflexes—Subnormal in reaction; cremasteric very faint. All deep reflexes increased; patellar clonus and ankle clonus both present; muscular sense normal; tactile sense normal; pain and temperature senses normal. In November, 1911, the records of the University Hospital show that an examination of his optic fundi showed signs of an old or receding optic neuritis. The larynx showed evidences of a violent inflammatory laryngitis at some previous time. His difficulty in speaking was not due to the laryngeal condition, which could only account for the slight changes in the tone of huskiness. Heart, lungs and kidneys were normal. Patellar, Achilles, abdominal, jaw, triceps and corneal reflexes were all present. He had a marked Romberg, Oppenheim negative; jaw and triceps were particularly lively. He had patellar and ankle clonus.

Patient was analgesic on the left half of the dorsal surface of his trunk, above the twelfth dorsal vertebra and on the left half of the trunk in front. He was hyperesthetic over a girdle area about four inches in width around the trunk below the last rib. He showed analgesic areas on the outer sides of both legs. Heat and cold were apparently normal. The sense of smell was diminished on the right side; there was a ptosis of both upper eyelids and an overacting frontalis muscle. There was partial paralysis of the right facial nerve. Taste was better on the right side than on the left. Uvula was dislocated to the right.

He was given salvarsan .6 gm. on December 18th, 1911; .3 on January 1st, 1912; .4 on January 8th; .3 on January 17th, and had about seven injections of bichloride of mercury. Patient had a diarrhea when entering the hospital, which was soon controlled with bismuth subcarbonate. When he left the hospital he was receiving thirty drops of potassium iodide daily. When next heard of he was in the Alms House, not improved in gait, markedly emotional and weak. He had had about thirty small intravenous injections of 606, with no benefit. Referred to Polyclinic Ward, C. and C. Hospital.

Following the first Swift-Ellis treatment, which was without discomfort, patient stated that for the first time in years he was able to walk with a normal feeling in his feet. He was greatly encouraged and anxious to continue the treatments. The second injection of 606 was successfully given. The spinal fluid was withdrawn for examination on the same day with great difficulty by the interne. The preparation of the serum, which was withdrawn as usual, was done in the same way, and I made the intraspinal injection myself the following morning, entering the canal without incident. Within twenty-four hours it was evident that the patient had developed a septic meningitis and a staphylococcus albus was found in the cerebrospinal fluid. Whether this was introduced by the needle's entering an old puncture wound or whether the serum had become

infected in the process of preparation will never be known. That a grave danger is certain to arise from any break in the technic is certainly shown by this case.

Case 6—Wong Gee Sui, denies lues, age 57, complains of sudden onset of flaccid paralysis of both legs. Bedridden for four years. Examination shows ptosis of the right eyelid. Paralysis of the right anterior rectus. No incoordination of the upper extremities. Marked incoordination and ataxia in lower extremities. Reflexes absent in knee and ankle. A. R. pupils. On the 29th of December, 1912, Wassermann blood —. September 2, 1913, Wassermann blood +. C. S. F. +. Cells 45. Nonne and Noguchi +. Two Swift-Ellis treatments following a failure by any previous efforts to produce any improvement resulted in slightly more control of the lower extremities, but this was not regarded as sufficient to warrant continuing the treatment.

Case 7—Cerebro-spinal lues, recurrent sarcoma. Charles G., age 47; entered June 26, 1913. Complained of vomiting spells. Ringing in ears for three months at time of entrance. No headache.

Examination showed nystagmus and optic atrophy. Pupils equal and react to light and accommodation. Scanning speech. Incoordination in upper extremities and tremor resembling intentional tremor. Weakness. Knee and ankle reflex absent. Abdominal present on right side. Absent or slight on left. Vasomotor disturbance in leg. Left leg had been amputated for sarcoma. Atrophy of interossei muscles. Irregular anesthesia on trunk and limbs. Wassermann blood after mercury —. C. S. F. ++. Noguchi +. Nonne +. Cell count 188. Only a few drops of fluid were obtained from the spinal canal at the first treatment and only with great difficulty was any obtained thereafter. * Two injections were given the patient two weeks apart, but no improvement was noted in any way and he suffered great pain and prostration. The patient lingered on six months and died of recurrent sarcoma. The autopsy by Dr. Ophüls showed almost complete adhesions of dura to pia of cord on both sides, the adhesions are strongest and thickening of pia most marked on posterior surface. Irregular hyperemic spots in pia anteriorly. Cut surface of cord at various levels shows some softening, slight discoloration in periphery, no tract degenerations seen. Moderate arteriosclerosis of arteries at base of brain. Pia of brain normal. No gross lesions noted on several frontal incisions.

From this autopsy it is evident that the "almost complete adhesions" referred to would prevent any general dissemination of the salvarsanized serum and negative any attempt at this form of local treatment.

Case 8—Cerebral lues. Mrs. Z., age 33. Brought to hospital in depressed state. Refused to speak and understood no English. From her husband it was learned that she was paralyzed two years ago. Was three months in C. and C. Mastoid on left side three weeks before paralysis. Recovered fairly well and has remained in normal spirits and good health ever since until present trouble. Has been depressed for eighteen days. Would suddenly stand still with indifference and without interest. Not excited. Had blank attacks like petit mal while at her work. Would not talk. Sent to hospital for diagnosis.

Examination—Spastic in arms and legs. Pupils unequal. Tongue to left. Deaf in left ear. Impossible to test on account of stupor and lack of interpreter. Wassermann blood ++. Cerebro Wassermann ++++. Nonne ++. Cell count, 22.

The first two treatments did her no special good mentally, but the spastic condition of arms and legs disappeared. The next three treatments were followed by rapid mental improvement.

The difficulties of the technic lie in securing the 40cc of blood an hour after the salvarsan, where

the veins are small. Absolute asepsis is essential of course and to overcome the likelihood of trouble it seems a wise step to advise exposing a vein. All of the work ought to be done in an operating room with every facility for surgical cleanliness and the patients should be kept in bed for two or three days after the treatment. It is our experience that this minimizes the chance of pain, which is often very severe after the treatments. Having secured the blood in a sterile tube we found that if it were put on ice too soon the clot failed to separate and an immense amount of work of centrifugalizing was required next day. We used big test tubes to receive the blood and poured off the clear serum instead of pipetting it. Possibly in a large centrifugal machine such as Swift and Ellis refer to they get clear serum very easily. Occasionally the serum is dark, smoky color and unchanged on filtering, apparently some hemolysis having taken place. We have noted no bad effects from using this serum. Most of our patients had no reaction, but when they experienced pain it was generally very severe, requiring two or three injections of morphine. We paid no attention to intraspinal pressure, but removed where we could an amount of fluid equal to the amount we injected. Where tapping had been done the day before this was not always possible, but a variation of a few cc did not seem to cause any increased disturbance.

SUMMARY.

From our experience with eight rather helpless cases, for whom no relief promised from other forms of treatment, it seems reasonable to use salvarsanized serum intraspinally.

There is reason to hope for improvement as long as the cerebro-spinal fluid remains Wassermann positive or shows pleocytosis.

The earliest improvement is shown by a tendency of the sensory symptoms to return toward normal.

After three to five treatments there has been some improvement in the gait of tabetics, even without special Frankel training. The reaction to the intraspinal treatments is sometimes very severe. Patients should be kept in bed for three days.

Dr. Grace Linforth Boalt in discussion: In the Sonoma State Home for Feeble-Minded and Epileptics from July 15th, 1911, to January 11th, 1914, the sera of one thousand two hundred and six inmates have been examined by the Wassermann test. There are forty-five more to be examined. Five per cent. of this number were positive. The positive cases and one hundred negative cases were checked by the Noguchi modification with the same findings, except in three cases, which gave a stronger reaction. At present there are one thousand and fifty-one inmates in the home. Two hundred and eighty-one, or one-fourth of the inmates, are epileptics. One-fourth of the inmates with the positive Wassermann were epileptics. That is, the per cent. of syphilis among the feeble minded in this home is five per cent., whereas among the epileptics it is twenty-five per cent. Forty-nine cases have been treated with salvarsan and neo-salvarsan. All responded promptly and satisfactorily from a serological standpoint, excepting three cases. Two of these cases were more of the insane type than feeble minded. One, age 12, who was failing rapidly before the treatment, died six weeks from the administration of the first treatment from syphilitic meningitis. Second

case, age 17, died three months from the first treatment from syphilitic meningitis. The Wassermann findings in the serum and spinal fluid did not change from a triple positive during the intervals. These cases might have resulted differently with the Swift-Ellis treatment. The third case is an epileptic, and so far all intravenous and mercurial treatment has not changed the degree of the intensity of the test or the number of convulsions. She has had nine convulsions a year for five years. She is now being treated with iodipin, and if we find the spinal fluid positive, Dr. Dawson will get the consent of the parents to give the Swift-Ellis treatment. At Agnews one case of hereditary syphilis is receiving the treatment, also a number of general paresis cases. Of thirty-eight cases of paresis in one institution the serum and spinal fluid both give triple positive in twenty-three cases. Two, an + positive serum and +++ positive spinal fluid. Three ++ positive serum and +++ positive spinal fluid. Ten cases gave a negative serum test with a triple positive spinal fluid. A few of these cases were checked by the Noguchi modification with the same results. Captain C. G. Snow of the General Letterman Hospital, Presidio, has checked a number and Dr. W. T. Cummins of the Southern Pacific Hospital a few of these cases, with the Lang's colloidal gold chloride test with some interesting findings. The spinal fluid of two meningitis cases, the patients showing mental symptoms, and giving a history of a recent infection, gave an absolute negative Wassermann with all other findings positive. That is, a differential cell count, a Nonne and butyric acid test. Both received prompt treatment with salvarsan intravenously and mercury with prompt and satisfactory return to normal. These were not institutional cases.

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PROSTATIC CARCINOMA IN A YOUTH.

By S. J. GARDNER, M. D., and W. T. CUMMINS, M. D., San Francisco.

L. P. R. Age 17 years. American. Machinist apprentice. Admitted Oct. 2, 1911. Family history negative. Previous history—no recorded illness except diphtheria 9 years ago.

Present illness: Onset about seven weeks ago with colicky pains in lower left side of abdomen accompanied by vomiting. Pains radiated to left testicle. No hematuria. Incontinence of urine affected by posture. Three weeks ago pain shifted to right side of lower abdomen and radiated to right testicle. Has lost much weight.

Examination: Well nourished, fairly well developed young man. Pulse and respiration normal. Eyes normal. No eruption. Tongue clean. Heart and lungs negative. Rectal examination bimanually shows hard, lobulated enlargement of the prostate, which was particularly painful on palpation.

Urinalysis: Clear; sp. gr. 1018; acid; no sugar nor albumin; no casts.

Death occurred on Jan. 12, 1912.

Post mortem record. Markedly emaciated. Lividity and rigidity moderate. No eruption, scars, nor bed sores. Peritoneum smooth, moist, glistening and no increase of fluid. Position of abdominal organs normal. A large, firm, pale, nodulated mass completely fills pelvis. Spleen somewhat increased in size but of normal shape. Capsule strips with some difficulty. Cut surface shows markings of fibrosis. Color brownish red. No evidences of tumor metastasis. Liver of normal size and shape, and shows typical "nut-meg" markings. No evidences of tumor metastasis. Gall bladder, stomach, intestines and pancreas normal. Both kidneys somewhat larger than normal. Capsule strips easily. Color brownish red. Considerable dilatation of calyces as well as pelvis. Both ureters dilated throughout their continuity to size of lead pencil. Both adrenals soft, yellow and cystic.

The bladder is moderately dilated and contains approximately 200 cc. of urine. Its wall is considerably thickened and varies between 0.5 and 1 cm. The mucous membrane is moderately congested, thickened and rugose but no evidence of ulceration. In the prostatic region there lies a firm, pale, nodular mass which has exerted considerable pressure upon the rectum, as dilatation is seen above the area of stenosis. This mass includes the neck of the bladder and as far back as the openings of the ureters. Two small masses project into the bladder. On sectioning, these masses are firm and pale with whorls and bands of tissue apparently of connective type. There are no evidences of congestion nor hemorrhage. The prostatic urethra is stenosed and the mucous membrane of this as well as the membranous portion is moderately congested.

Mesenteric nodes are enlarged, firm and pale, their average size being about that of a soup bean. The retroperitoneal group are enlarged to the size of chestnuts with the same general consistency and appearance as the mesenteric group. Near the splenic flexure of the colon there is a pedunculated lymph node somewhat larger than a horse-chestnut (6x5x4 cm.). Its tissues are identical in appearance with the other nodes. Though very pale this was at first mistaken for an accessory spleen.

Permission for a partial autopsy only was granted so that an examination of the thoracic organs and central nervous system could not be made.

Histological examination: Spleen. Capsule and trabeculae show moderate fibrosis. Sinuses in places considerably dilated. Large quantities of hemosiderin are seen. Liver. There is no abnormality except for a moderate passive congestion and hemosiderosis of parenchyma near the midlobular areas. Kidneys. Capsule is moderately fibrosed. Much of the cortical epithelium shows degenerative and necrotic changes. In some of the tubules the epithelium has desquamated. There are numerous areas of connective tissue overgrowth. Adrenals. Marked vacuolation of the cells of the fascicular and reticular zones. Pancreas. A moderate fibrosis is evident. Prostate. There is considerable overgrowth of connective tissue. The epithelium of many alveoli shows marked proliferation and penetration of the basement membrane. In some places evidences of alveoli are seen but in many other places the epithelial masses are solidly formed. Retroperitoneal lymph nodes. All of these are of the same general structure. The connective tissue shows some overgrowth and between these trabeculae there are large and small masses of cells with vesicular nuclei resembling closely the above-mentioned alveolar epithelium of the prostate.

Clinical diagnosis: Sarcoma of the prostate.

Pathological diagnosis: Carcinoma of the prostate and retroperitoneal lymph nodes; chronic in-

terstitial splenitis and hemosiderosis; passive congestion of the liver; chronic parenchymatous nephritis; hydronephrosis and hydrometer; chronic interstitial pancreatitis.

THE RELATION OF LOCALIZED TENDERNESS TO THE SITE OF THE CAUSAL LESION IN PERFORATIVE PERITONITIS.*

By R. T. STRATTON, M. D., Oakland.

In keeping with this symposium the bearings of this paper will center on perforation is gastroduodenal disease. Four cases of perforation of ulcer of these parts coming within the writer's personal experience form the clinical basis of this paper.

The time limit will permit neither the consideration of the relations of the symptom under special view to the larger symptomatology of perforation, nor to the differential diagnosis.

The weight of present-day judgment seems to be that within several hours from the time of perforation there is usually a widespread, diffuse abdominal tenderness, and in addition "careful search will reveal an area of exquisite intensity overlying the ulcer."¹ Other localized areas of special tenderness with a single exception, are not dwelt upon, as one of the generally recognized occasionally associated features of the condition.

A number of authorities dwell upon the fact that with perforation in certain cases of duodenal ulcer, the main symptoms may become localized in the cecal region, and have often led to operation for appendicitis, instead of a first, direct surgical attack upon the upper digestive tract. The real source of these symptoms has even been overlooked after this misapplied surgery. Moynihan, as early as 1901, found 49 recorded cases of perforated duodenal ulcer resembling appendicitis, in 18 cases of which the first abdominal incision had been made over the appendix. His explanation is that the foreign fluid following the right-sided para-colic peritoneal planes, reaches the *caput coli* and causes there the local serous irritation which results in so much symptomatic confusion and surgical error. Even within the first three hours following perforation, greater abdominal resistance and more marked, even exquisite, tenderness may exist at the usual site of the appendix.

It may be that this was the exceptional condition Munro had in mind, when speaking broadly of peritonitis but without detailed reference or attempted explanation, stated that "the tenderness and spasm, with few exceptions, are located over the area of more marked infection."² Ordinarily, however, in perforation of both gastric and duodenal ulcers, the extruded fluid runs at large in the peritoneal cavity, in an indefinite way, producing diffuse peritonitis.

In view of what clinical experience has established in regard to local symptoms developing in

the right iliac region, does it seem unreasonable that similarly localized symptoms of irritation should arise in the presence of an advancing peritonitis in other portions of the abdomen as well? It has not, however, thus far come to the writer in his search, that except as already noted, other associated areas of special irritation are generally recognized. That, however, restricted irritative symptoms at a distance from the ulcer, amongst which localized tenderness must be one, are often enough met with but wrongly interpreted prior to the operation, is strongly suggested by the surgical errors reported in connection with operations in the course of peritonitis from gastroduodenal disease. Often enough, the operator's efforts for a short search and a quick operation are hampered by a misinterpretation of symptoms and a consequent disadvantageously placed abdominal incision. Yet in the long run, the amount of manipulation of the viscera, the operative trauma, the time consumed in operation affect decidedly the mortality rate.

The findings of the writer are at variance in some respects with what seems to be the generally accepted relationship of localized tenderness in this disease. The apparently controverting testimony noted in his cases, if admitted, may, therefore, be regarded as exceptional.

A possible source of difference between observers as to conclusions regarding sensitive areas might result from different degrees of palpatory pressure. The method of abdominal palpation followed by the writer was not a deep but a moderate, reasonable pressure such as the condition of the patient would warrant, and the superficial location and the sensitiveness of the parts require. If, however, the results of deep and moderate pressure are at variance, it would be well to have the difference established.

As the result of his personal observations the writer is disposed toward the following conclusions bearing upon the relation of localized tenderness to the site of the causal lesion.

1. The site of the perforated ulcer, as indicated by moderate abdominal palpation within several hours after the onset, is not uniformly *intensely* sensitive.
2. Neither is it always the most sensitive area.
3. In addition to the well recognized local symptoms referable to the region of the perforated ulcer and the appendix, other parts of the abdominal viscera may, exceptionally, be the seat of confusing sensitiveness.

Case 1. D., male, age 50, first seen over twenty-four hours after perforation, refused operation and perished. Autopsy showed diffuse septic peritonitis and perforated duodenal ulcer.

Case 2. P., male, age 35, first seen two hours after perforation, presented only classical symptoms of most intense degree; no diagnostic or operative difficulties. Operation showed perforation of gastric ulcer on the anterior surface to the right of the median lines, close to the greater curvature. Prompt recovery ensued.

Case 3. M., male, age 42 years, was first seen six hours after perforation. The entire abdomen was rigid and retracted. The pyloric region was not specially tender. There was, however, a per-

1. Deaver, John B.: Acute Perforated Duodenal and Gastric Ulcers. *Annals of Surgery*, May, 1913, p. 705.

2. Keen's Surgery, Vol. III, p. 771 (J. C. Munro).

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

sistent area of marked epigastric sensitiveness the size of an egg to the left of the median line, to the outer side of the left rectus. Its relation to the area of greatest muscular rigidity was not noted. Operation advised. It was three hours later before he could decide on his course, be gotten to the hospital and prepared for operation. Grumous material and inflammatory exudate covered the gastric and colonic surfaces beneath the area of special tenderness, but it was not specially restricted to that locality. Recent adhesions were present between stomach and abdominal wall. All parts exposed showed an intensely inflamed peritoneum; that portion beneath the seat of marked sensitiveness not as pronounced as that more adjacent to the location of the ulcer. **The perforation was found, not at the left beneath the most tender area, but on the opposite side close to the pylorus near the lesser curvature.** Recovery ensued.

Case 4. C., male, age 51 years, was first seen nine hours after perforation. He had been originally taken to a hospital in a neighboring city, where diagnosis was not made, but a hypodermic of morphine administered. Neither water nor whisky swallowed after onset caused gastric distress. His previous history as to ulcer was not convincing. He was without fever and in good general condition. He did not seem seriously ill, nor was he apparently much distressed. His abdomen was only moderately contracted. **The left side was decidedly the more rigid.** There was only a mild, diffuse, epigastric tenderness. There was, however, an area of marked sensitiveness, sharply localized beneath the left rectus about 5 cm. below the level of the umbilicus, beneath the most rigid portion of the abdominal parietes. Colonic irrigation was without result. The water returned with an apparent slight bloody tinge with sanguino-mucous flakes. Diagnosis was in doubt. The aggregate of symptoms and physical findings seemed to indicate a lower intestinal, rather than a gastric or duodenal lesion. Operation three hours later. Incision was made in the midline below the umbilicus. Everywhere was present the evidence of pronounced, diffuse, septic peritonitis. Beneath the area of special tenderness, there was a small, rather localized collection of sero-purulent and flaky exudate. The cecal and left transverse colonic regions, where special symptoms of irritation were not noticeable before operation, showed, however, the same condition. This incision was closed except at its lowermost portion where a pelvic drain was placed. The epigastrium was then opened and **perforation was found distant from and on the side opposite to the site of greatest sensitiveness,** close to the pylorus, at the lesser curvature. Recovery ensued.

Can these findings be reconciled with the generally recognized symptomatology and with the numerous apparently contradictory operative observations? The following is offered as a possible solution:

The portion of peritoneum at the site of perforation, in certain instances, being subjected to continuous, prolonged irritation from an unusually concentrated and irritating extruded gastric contents, to which the tissues of some individuals may react differently than those of others, may after a time, lose something of its sensitiveness and fail to respond to increased stimulation by palpation. This condition would only be analogous to the well recognized depression of nerve function, even paralysis, resulting from overstimulation in other parts of the body of motor, and special sense nerves. Or as a result of local toxic and inflammatory influences, actual changes may take place in the delicate peritoneal nerve

terminals that prevent the conduction of pain impulses.³ Coincidentally, other areas coming within the zone of spreading irritation, either for some reason naturally more sensitive or having been subjected to a less overpowering degree of irritation, by reason of their distance from the ulcer, may at this later period and at least temporarily, be relatively more keenly alive to pressure than is the original focus from which the irritation has come. That the greatest abdominal wall protective rigidity should then be over these now more sensitive parts does not seem to be strange or unreasonable; or that, as these new peritoneal areas are involved, symptoms referable to the newly affected part may stand out, at least for a time, with conspicuous boldness and attract and unduly hold the surgeon's attention.

At times the approximate site of perforation is susceptible of fairly close determination. But again, with an incomplete antecedent and recent history, a knowledge of which the sufferings of the patient or the ignorance or nervousness of his associates prevent the surgeon from gaining; with an atypical symptomatology; with other symptoms resulting from almost necessary complications of the primary disease pressing to the front and obscuring the original state; with the usual signs of morbidity dissipated or altered by injudicious narcotic medication, the clinical picture may be so changed, that the diagnostic skill of the well informed surgeon may be overtaxed.

This much, at least, is demanded in the presence of general peritonitis: If the local tenderness and other signs seem to indicate that the appendix is involved, before its surgical approach, the duodenum should be questioned and first given clearance. If localized tenderness exists in other abdominal areas, no matter how low down, the stomach and duodenum, both, should be considered as possible original sources of trouble, and passed upon. After the lapse of several hours from the time of perforation, local abdominal tenderness must be cautiously judged and discriminatingly received, if at all, as a directing symptom. The possible falsifying peritoneal tendency as to localized tenderness demands its accurate collation with all other symptoms of the condition in question together with a consideration of the stage of the disease and the available history.

THE BUTYRIC ACID TEST OF NOGUCHI AS AN AID IN DIAGNOSIS.*

By F. F. GUNDRUM, M. D., Sacramento.

The cerebro-spinal fluid is the liquid which bathes the brain and spinal cord, acting, first, as a hydraulic cushion to protect against jars; second, as a medium to carry away waste products; and third,

3. Prof. Maxwell, of the Department of Physiology, University of California, informs the writer that the possibility of paralysis from overstimulation is positively determined in sensory nerves. As to the conduction of pain impulses, the matter has not, so far as he is aware, been actually worked out; he regards it, however, not improbable. He advanced the suggestion of the possible depression of the function of pain conduction from toxic effects on the nerve terminals, as a probable added factor in this special condition.

* Read before the California Northern District Medical Society, at Sacramento, California, November 11, 1913.

as a reservoir to regulate intracranial pressure. The whole amount of the spinal fluid, at any one time, is uncertain, possibly in an adult from 50 to 90 CC. The fluid is actively secreted from the choroid plexuses in the lateral ventricles. The tangled web of blood vessels in these organs is covered by a single layer of flattened cells which have their origin in the posterior wall of the embryonic neural canal, and are, therefore, epiblastic in origin. The spinal fluid is secreted by them into the cavities of the lateral ventricles. It flows from the two lateral ventricles through the foramina of Monroe, into the third ventricle, thence through the aqueduct of Sylvius into the fourth ventricle. From here the larger portion passes through minute openings in the roof of the fourth ventricle, the foramina of Magendie, and spreads out over the cortex of the cerebrum and downwards in the subdural spaces of the cord, where it is taken up by the lymphatics and veins of the dura and returned to the general circulation. A smaller portion penetrates the central canal of the cord. The fluid under normal conditions is a water-clear, alkaline liquid under a pressure of approximately 100 mm. of water. It does not coagulate when left to stand; the specific gravity varies between 1002 and 1010.

It is considered abnormal to find more than about eight white blood cells to each c. mm. of fluid; usually there are but one or two; these belong to the group of lymphocytes. Chemically, the fluid shows but a faint trace (.03 to .06%) of proteid and a small amount (0.1%) of dextrose, enough to give a slight reduction of Fehling's solution.

Under the influence of diseases of the central nervous system, the spinal fluid undergoes certain alterations in physical, cellular and chemical characteristics.

1. The physical properties may become changed in the following ways: a. Cloudy fluids. These cloudy fluids generally indicate an extravasation of white blood cells into the cerebro-spinal fluid—in other words, a meningitis. Microscopical examination usually easily determines what type of invading organism is the cause of the turbidity observed. b. Bloody fluids. These are seen particularly after fractures of the bony canal protecting the spine or skull, and are often an early evidence of fracture at the base.

2. Changes may take place in the cellular contents. a. Polymorphonuclear cells may be greatly increased as is commonly seen in the cerebro-spinal meningitis, influenzal meningitis, etc. b. Lymphocytes may show marked increase in numbers as in tuberculous meningitis and lues. c. Increase in red cells often follows injury done by the needle upon entry. This blood is small in amount and a few seconds of flow clears the needle. The presence of blood from such a slight injury differs very

greatly from the abundant crimson flow often seen after cranial fracture.

3. Marked changes may also take place in the chemical reaction of the fluid. The capacity for reducing Fehling's solution may be lost. The proteid content may or may not be increased. It is upon this latter chemical characteristic (the presence or absence of a demonstrable increase in proteid content) that this series of 43 cases was recorded. There are several common tests for the determination of the excess of albumen.

1. Nonne's. The fluid is mixed with an equal quantity of warm saturated ammonium sulphate solution. The appearance of turbidity or precipitate declares a positive test.

2. The hydrochloric acid test of Braun & Husler. Only 1 cc. of cerebro-spinal fluid is required for this test. To this is added 1 cc. at a time, a solution of .003 normal hydrochloric acid. If after 5 cc. are added, no precipitate forms, the reaction is negative. It is desirable that a freshly prepared solution of the acid be used.

3. The butyric acid test devised by Noguchi. Two parts of cerebro-spinal fluid are mixed with five parts of 10% butyric acid in normal salt solution and the mixture is brought to a brief boiling. Then one part of normal sodium hydroxide solution is added and the fluid brought to a second brief boiling. The appearance within fifteen minutes of a flocculent or granular whitish precipitate constitutes a positive test. A faint turbidity without flocculi is to be considered negative.

During the past three years at the Sacramento County Hospital we have obtained for study the cerebro-spinal fluid of 43 cases in which pathological, microscopical or other laboratory examinations made the clinical diagnosis undoubted. Thus we had data at hand for the estimation of the ultimate value of the butyric acid test in clinical diagnosis. These cases easily fell into two groups.

1. Those in which cloudy fluids were obtained. Of these, ten were spinal meningitis and two secondary meningitis due to pneumococcus. These, of course, were all positive as would be expected. The fluids were centrifuged and the clear portions only used for the tests. In 31 instances clear fluids were obtained. The list of diseases included here is a varied one. It embraces a heterogeneous group of maladies in which some symptoms referable to damage in the cerebro-spinal axis developed. Positive reactions were obtained in tabes, general paresis, tuberculous meningitis, poliomyelitis and rabies. Negative reactions were obtained in endocarditis, old poliomyelitis, old hemiplegia, bronchopneumonia, cerebellar tumor, typhoid, sunstroke, uremia, delirium tremens, influenza and lobar pneumonia. The group of negatives seems to include very many remotely allied maladies, but in all of them, at the time the lumbar puncture was made, there was some symptom or sign suggesting a possible involvement of the brain, cord or meninges. The accompanying chart represents more graphically the diagnosis made clinically and those made later pathologically, with the result of the butyric acid test in the right-hand column.

BUTYRIC ACID TEST.

(A.)—Cloudy Fluids.

Fluids centrifuged and clear portions used for test.

	Clinical.	Pathological.	Butyric Acid test.
1	Cerebro-spinal meningitis	Diplococcus	Posit.
2	" " "	Diplococcus of Weischelbaum	Posit.
3	" " "	" "	Posit.
4	" " "		
5	" " "	" "	Posit.
6	" " "	" "	Posit.
7	" " "	" "	Posit.
8	" " "	" "	Posit.
9	" " "	" "	Posit.
10	" " "	" "	Posit.
11	Secondary meningitis	Pneumococcus	Posit.
12	" "	"	Posit.

(B.)—Clear Fluids.

1	Cerebral lues	Wassermann (Noguchi)	Posit.
2	Tuberculous meningitis	Autopsy tubercles	Posit.
3	Acute rheumatism		
	Endocarditis meningismus		Negat.
4	Poliomyelitis (old)		Negat.
5	Lues spinal	Wassermann (Noguchi)	Posit.
6	Lues spinal	Gummata in skin	Posit.
7	Hemiplegia (old)		Negat.
8	Pulmonary tuberculosis	Cavities in lungs	Negat.
9	Tuberculous meningitis	Broncho-pneumonia	Negat.
10	Uremia (?)	Tuberculous meninges	Posit.
11	Multiple sclerosis		Negat.
12	Cerebro-spinal lues	Wassermann (Noguchi)	Posit.
13	Tabes dorsalis (classical)		Posit.
14	Cerebellar tumor	Glioma (autopsy)	Negat.
15	Lues	Wassermann (Noguchi)	Posit.
16	Poliomyelitis (acute)	Flaccid paralysis	Posit.
17	Tuberculous meningitis	Tubercles on pia	Posit.
18	Tuberculous meningitis	Tubercles on meninges	Posit.
19	Meningitis (typhoid)	Typhoid fever (meningismus)	Negat.
20	Tuberculous meningitis	Tubercular bacilli (guinea pig)	Posit.
21	Cerebro-spinal lues	Wassermann (Noguchi)	Posit.
22	Cerebellar tumor	Glioma (autopsy)	Negat.
23	Tuberculous meningitis	Tubercles in meninges	Posit.
24	Tabes dorsalis	clinically typical	Posit.
25	Sunstroke		Negat.
26	Uremia	Chronic nephritis	Negat.
27	General paresis	Clinically typical	Posit.
28	Rabies	Inoculation tests positive	Posit.
29	Cerebro-spinal lues	Wassermann (Noguchi)	Posit.
30	Delirium tremens		Negat.
31	Influenza	B. Influenza in sputum	Negat.
32	Pneumonia lobar (meningismus)	Autopsy	Negat.

The butyric acid test was not controlled by any of the other tests for albumen increase in this series, but merely by the autopsy and pathological findings in each case. Cases were reported in which ultimate diagnosis beyond reasonable doubt, was made through autopsy, microscopical or other laboratory method.

CONCLUSIONS.

1. In this small series of 43 cases, the butyric acid test was positive in all instances where marked inflammation or degeneration was going on in the cerebro-spinal system.

2. It was absent in diseases where, although there seemed to be spinal involvement, no actual organic nervous lesion was present.

3. In all doubtful cases simulating inflam-

matory diseases of the brain or spinal cord, spinal puncture is indicated. If the fluid is turbid, the butyric acid test is superfluous. If the fluid is clear, the butyric acid test enables us to tell whether or not inflammatory or degenerative changes are taking place.

4. In other diseases where symptoms of meningeal irritation arise, the obtaining of a clear spinal fluid which fails to show the butyric acid test of Noguchi, is of considerable moment, particularly in the matter of prognosis.

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SIX-HOUR STASIS.*

By HOWARD E. RUGGLES, M. D., San Francisco.

A six-hour residue in the stomach is the best evidence we have of pathology somewhere. It is a perfectly definite think—easily recognized. The normal limits of peristalsis or tone vary widely and it is often impossible to say definitely whether they are pathologic or not, but a residue is evident—whenever it is large enough to be recognized it means trouble. It represents the resultant of forces acting on the stomach contents; it is the balance between peristalsis and the resistance offered by the outlet. Normally tone and peristalsis will have overcome the sphincter and removed two or three ounces of bismuth from the stomach in three to five hours, so a residue means diminished emptying power or increased resistance at the outlet—usually the latter. Of course it is essential that no food be allowed to enter the stomach during the six-hour interval or the bismuth remnants will be mixed with the meal and an apparent residue result.

The commonest cause of a residue is pylorospasm, due most often to the irritation of a peptic ulcer near or upon it, but many other things cause pylorospasm reflexly. As Wm. J. Mayo said recently: "The stomach is the alarm box of the abdomen—the fire is often elsewhere in the peritoneal cavity and the water is too often turned on the alarm box instead of the conflagration." Kaufman, in his presidential address before the Gastroenterological Congress in Washington last year, made the statement that there is no organ in the body, functional or organic disease of which will not eventually affect the stomach.

Cannon in 1905 showed that in cats, after intestinal section and anastomosis, peristalsis went on in the stomach as usual after the introduction of food but the pylorus remained tightly closed for six hours. He also showed that a drop of croton oil in the rectum or cecum caused prolonged gastric and ileal stasis. Some recent work by Baumstach (*Zeitschr. f. phys. Chem.*, 1913, p. 437) has shown that partly fermented mixtures introduced into the small intestine in fistulous animals produced gastric stasis where normal contents did not.

The Roentgenologists have seen a good many of these reflex spasms of the pylorus. George, Case, Barclay and others have seen them in ulcer, gall-bladder, and appendiceal disease, gastric tumors, renal calculi, pelvic affections, tabes, hysteria, hyperthyroidism, morphine and nicotine poisoning and oral sepsis.

At St. Luke's we have had 35 cases of six-hour residue since last fall—11 of them were confirmed by operation or post-mortem, and in 14 others the diagnosis, both clinical and radiological, was reasonably certain.

Of the proven cases there were:

Duodenal ulcer	3
Chronic appendix	3
Cancer of fundus.....	2
Cancer of pylorus.....	1

Cancer of oesophagus..... 1

Sarcoma of liver (metastatic)..... 1

Including the cases before mentioned the series showed:

	%
Duodenal ulcer	30
Cancer of stomach.....	25
Chronic appendix	17
Ptosis	11

and one case each of gall bladder disease, cancer of the esophagus, sarcoma of liver, benign stenosis of pylorus, partial obstruction of small intestine and morphine poisoning. I have also seen residues with tuberculosis of ileum, lues of stomach and pericolic membranes.

TABULATION AND DIFFERENTIAL DIAGNOSIS OF LIVER CASES OCCURRING IN THE STANFORD WARDS OF THE CITY AND COUNTY HOSPITAL DURING THE PAST FEW MONTHS.*

By R. W. HARBAUGH, A. B., M. D., San Francisco.

The differential diagnosis considered in these cases will lie mainly between cirrhosis, lues and malignancy. They may be divided into the following classes:

Primary malignancy, 1 case; secondary malignancy, 3 cases; cirrhosis of liver, 2 cases; lues of liver, 2 cases; cirrhosis with malignancy, 1 case; tropical abscess of liver, 3 cases; passive congestion of liver, many cases.

Case 1. Irish laborer. Age 55. Complaint, "yellow skin, pain across the back." Patient was well up to three months ago. No previous history of stomach trouble or pain. Present illness began with vomiting immediately after eating, and pains in small of back. Became yellow gradually and had stabbing pains in right hypochondriac region. Jaundice cleared up for two weeks, but came back and increased to an intense yellow. Loss of weight was sixty pounds over a period of two months.

Physical Examination: Patient is deeply jaundiced. Liver extends from fourth interspace to four inches below costal border. It is not tender, but hard, firm and nodular. The spleen is palpable. No free fluid. There is a gland the size of a hazel nut, palpable in the right supra clavicular fossa. (Virchow's gland.)

Clinical Tests: 1. Wassermann—negative. 2. Blood—secondary anemia. 3. Urine—contains bilirubin and urobilin. 4. Stools—no occult blood. Bile is present. 5. Stomach—no stasis. No Hcl. Occult blood is present. This patient remained under observation before death. He ran a low-grade temperature. Had no vomiting. Some nocturnal pains, diminishing jaundice, gradual emaciation and ascites two weeks before his death.

Clinical Diagnosis: Primary carcinoma of gall ducts. Based on: Enlarged nodular liver, deep jaundice, Virchow's gland, anemia, cachexia, loss of weight, absence of ascites until late, absence of primary focus.

Differential Diagnosis: 1. Cirrhosis. 2. Secondary malignancy. 3. Lues. (a) Lues is ruled out on a negative Wassermann. (b) Against cirrhosis is the nodular liver. The presence of nodules rules out cirrhosis if they can be distinctly demonstrated as in this case. The late appearance of ascites (two weeks before death) is against cirrhosis. (c) Secondary malignancy is ruled out in the absence of a demonstrable primary focus in this case.

Autopsy Diagnosis: Primary carcinoma of the bile ducts and common duct.

A most interesting point in this case was that

* Read before the San Francisco County Medical Society, April 7, 1914.

* Read at the San Francisco County Medical Society, March 3, 1914.

for two weeks before death the patient ran a leukocyte count of 30,000 to 40,000 with a high polymorphonuclear differential count. Before death this was explained as being most likely due to an infective cholecystitis. At autopsy smears and cultures from liver, gall-bladder, ducts, gastro-intestinal tract, etc., were taken with negative results.

We have had two other cases of a similar nature. One was a primary carcinoma of the pancreas, the other a cirrhosis of the liver.

Case 2. In class "cirrhosis with malignancy." Street sweeper; age 64. Complaint, "stomach trouble and pain in back." Patient has been a heavy drinker for years. Was well up to five months ago, when he had some slight indigestion and pain across the abdomen. Has been very constipated. Has lost sixty pounds in the last six months. About three weeks ago his abdomen began to swell. He has no pain now and enters hospital because of weakness.

Physical Examination: Patient's abdomen is distended and typical signs of fluid are present. About three gallons of clear, straw-colored fluid are withdrawn and the liver is felt two-finger breadths below costal margin. It is exceedingly hard, almost bone-like and not at all tender. The edge is irregular in contour but no nodules are felt. Spleen not palpable.

Clinical Tests: 1. Wassermann—negative. 2. Blood—normal. 3. Urine, foeces, sputum—nothing abnormal. 4. Gastric contents—normal acidity. This patient was under observation for three weeks. He had no gastric disturbance or pain in abdomen. Ran a low-grade temperature. Had rapidly recurring ascites after tapping.

Clinical Diagnosis: Cirrhosis of liver. Based on: Alcoholic history with indigestion, gradual weakness with loss of weight, ascites, and the character of the liver—which was exceedingly hard, smooth and not tender.

Differential Diagnosis: 1. Cirrhosis. 2. Secondary malignancy. 3. Lues. (a) Lues is ruled out on the grounds of a negative Wassermann. (b) Secondary malignancy—against this we have the fact that the liver was smooth. In the absence of demonstrable nodules in the liver along with the absence of the demonstrable primary focus, a diagnosis of secondary malignancy could not have been made. (c) So our diagnosis is cirrhosis made on the basis above given.

Autopsy Diagnosis: A typical cirrhotic liver. In addition there were three nodules ranging from the size of a walnut to a hen's egg. These were located on the anterior surface high up under the diaphragm, and on section proved to be carcinomatous. So our case is a cirrhosis of the liver undergoing an early primary carcinomatous degeneration.

Case 3. In class of "secondary malignancy." Teamster; age 48. Complaint, "pain in stomach region." Patient's trouble began eight months ago with loss of appetite and feeling of weakness. Belches gas but has had no pain after food. Is a heavy drinker and denies chancre. At times has had a dull pain in the right hypochondriac region which radiates to axilla. Loss of weight fifty pounds in four months.

Physical Examination: Examination of abdomen shows a dome-like extension in epigastrium from costal margin to umbilicus. It appears to be most prominent to right mid-line. Right flank fuller than left. Palpation proves the mass to be liver. The lower edge is palpable straight across the abdomen just above umbilicus. Right lobe appears to be as much enlarged as left. The edge is very hard and irregular. Not tender. On the surface many hard, small nodules are palpable, being about the size of a hickory nut. Irregular ridges are pal-

pable on the liver surface. It is very hard and bone-like. Spleen not palpable.

Clinical Tests: 1. Wassermann—negative. 2. Blood—no anemia. 3. Urine—negative. 4. Stool—large amount of fat. 5. Gastric contents—normal acidity. 6. Sputum—negative. This patient was under observation one month before death. Had no pain or stomach upset. Ran a low-grade temperature.

Clinical Diagnosis: "Secondary carcinoma of the liver." Based on: The large nodular character of the liver. Cirrhosis is ruled out by the nodular character of the liver. The primary focus could not be definitely established in this case, but the quantities of fat in the stool classed the pancreas as a probable point.

Autopsy Diagnosis: A primary cancer in the body of the pancreas with secondary nodules in the liver. The primary focus being in the body of the pancreas accounts for the lack of pain during the course of the disease.

We have had one other case similar to this with the primary focus involving the tail of the pancreas. The head of the pancreas is the common focus in pancreatic disease and the course is apt to be without pain, as in our cases, unless the head is involved.

Case 4. In "luetic" class. Male; age 38. Locomotive fireman. Complaint, "pain in the right side of chest and abdomen and shooting pains in legs." Patient has been ill for past year. Has had no gastro-intestinal upset. He is unable to work because of headaches and severe pains in the legs and other bones. Has had fever and chills at times. Has never had a chancre. Has lost no weight. For the past six weeks he has had shooting pains in the right hypochondriac region.

Physical Examination: Shows the liver to extend a hand's breadth below the costal margin and the left lobe is larger than the right. The edge is hard, irregular and exceedingly tender. No nodules are felt, but the surface is irregular. No fluid. Spleen not palpable.

Clinical Tests: 1. Wassermann—+++ positive. 2. Blood—normal. 3. Gastric contents—normal acidity. 4. Urine, foeces, sputum—normal. This patient remained in hospital three months. Lost no weight. Had severe pain in liver region, developed a periostitis of rib. Ran a slight temperature at times. Had a slight jaundice at times.

Clinical Diagnosis: "Lues of liver." Based on: History of headaches, shooting pains in leg and liver, periostitis of rib, character of liver—irregular, very painful, left lobe larger than right, slight jaundice, slight temperature, and duration of one year with no loss of weight. Positive Wassermann. Salvarsan in repeated doses and mixed treatment was given, and in two months the liver had reduced definitely in size. The pains had gone and patient was able to leave hospital and continue work.

Abscess cases. We have had three cases of liver abscess in the past few months, with the amebae demonstrated in each case in scrapings from the abscess wall. Two of these patients had been in the tropics and gave histories of previous dysentery of from six months to one year's duration.

The third was that of a French woman who has lived in San Francisco for the past twenty-five years and has had no dysentery. A large abscess with typical "anchovy sauce" pus was found at operation involving the right lobe of the liver. Curettings in the abscess wall contained amebae.

The case is of interest from the standpoint of her twenty-five years residence in San Francisco.

Passive congestion cases. We see many cases

with livers enlarged nearly to the pubes from passive congestion in heart cases, and cite this congestion and enlargement as an etiological factor in a subsequent cirrhosis.

I wish to express thanks to Dr. H. P. Hill, and Dr. R. B. Tupper for their aid in the direction of the study of these cases.

UNCOMFORTABLE BABIES.

By LANGLEY PORTER, M. D., San Francisco.

The uncomfortable baby presents one of the most trying problems that the clinician has to face, for when the infant is in distress, the whole family becomes neuresthenic and the trials of the attending physician are numberless.

It is unfortunate that too often our views of the cause of discomfort in these little ones, are limited to the digestive tract; and even in this field, to disturbances of gastric and intestinal digestion, while as a matter of fact the underlying root of the disturbance may be in an entirely different area.

It might be well to divide these babies who show discomfort into groups. First, there is the great group of the breast-fed, as opposed to the second group of artificially nourished babies. In order to consider the breast-fed more in detail, it would be well to subdivide chronologically into the periods of early infancy and middle infancy,—that is, respectively, from the first day to the end of the fourth month, and from the end of the fourth month to the end of the tenth month. Bottle-fed babies can be grouped in the same way, but a third group should be added which we will call the group of later infancy,—that is, from the tenth to the sixteenth month.

The causes of discomfort in the first group of the breast-fed are, for the most part, due to errors or neglect on the part of the attendants. At this time, with these babies digestive disturbances are less frequently the cause of discomfort than are one or another of the causes which have nothing to do with stomach or intestines. These causes that should be sought for may be in the environment of the baby, for instance, it is a very frequent experience to be called to see a child in its first week who is the subject of a fit of uncontrollable crying, and after having assured ourselves that the cause is not a serious one, to order the child out of its baby clothes, have it wrapped in cotton-wool, to see it immediately cease crying and go to sleep. The ordinary clothes designed for the covering of an infant certainly reflect no credit on human intelligence. The tight, inelastic belly-band, with its innumerable windings, alone is the cause of much suffering, and I have seen more than once, the axillae of infants excoriated by the hard seams of ill-fitting petticoat and dress sleeves. Aside from the fit of the clothing, its excess may cause a good deal of discomfort to the baby, for while an infant needs to be maintained in a state of warmth, an excess of heat is most distressing to it.

A not infrequent cause of discomfort lies in the use of a feather or other soft pillow for a mattress. The little one placed on such a support, or rather lack of support, is twisted into all sorts of strained

positions, and many a whining, weary child is changed into a happy, normal baby by the simple expedient of replacing such a pillow by a little hair mattress. The pillow for the infant's head, is, also, a source of much discomfort. It is usually much too large, and, in many instances, so soft that it is divided by the baby's head with the result that the child's face and ears are buried in soft down, whereupon head-sweating with its attendant irritation develops. The best pillow for a little baby is made thin and is composed of hard packed hair, or better still, one or two thicknesses of sadler's felt.

It is needless to call attention to excoriation of the buttocks as a cause for distress. I am sorry to say that a great many more babies come from obstetrical hospitals with excoriated buttocks than should. More and more, I am convinced that the physician who does not pay attention to minute details when dealing with infants does himself and his patient much wrong. I have come, of late years, to insist on seeing the diapers of babies changed whenever I am in attendance, and it is really astonishing how neglectful many mothers and nurses are of ordinary cleanliness. Another cause of crying, commonly overlooked, is phimosis, the existence of which is a reflection on our profession, for if every male baby as should happen, underwent a retraction of its foreskin during the first three days of life, there would be no such thing, and a great many babies that now cry would be still. Phimosis, however, is not the only cause of pain that arises from the urinary tract of children. It is a very common occurrence to have young babies pass small concretions of uric acid, and in such instances the careful examination of the diaper will reveal bright, blood-red spots, the result of uric-acid stain. Even without such concretions, concentration of the urine or high acidity will often irritate and worry a baby sufficiently to make its crying almost intolerable to the family. Under such circumstances, the use of rectal injections of sodium carbonate, or normal salt solution, an ounce or two four or five times a day, coupled with free exhibition of water by the mouth will alleviate the trouble.

A rare cause of crying, amenable to the same kind of treatment, especially if it be combined with hypodermoclyses, is so-called pseudo tetanus of the new born. This used to be considered true tetanus neonatorum and was thought fatal, but we know now that it is merely the result of drying out of the tissues in very early life with a resulting increase of muscular tonicity and electrical response such that the picture closely mimics true tetanus. These children are exceedingly uncomfortable and cry almost continuously, and any attempt to handle them only adds to their misery; yet it is astonishing with what rapidity and completeness they respond to a saturation of their tissues with fluid. In many of these cases it would seem that sepsis lay at the bottom of the trouble, for often we find infections of the umbilical stump and even in the absence of this picture of pseudo-tetanus, such infection is by no means an uncommon cause of pain in the new-

born and should always be sought for before deciding that a baby is crying because of the belly-ache. It is sometimes believed that there must be a great deal of pus and much reddening of the surrounding tissues for an umbilical infection to be of any importance, but as a matter of fact, the infection which is evidenced by a moderate reddening, little pus, and a scant watery discharge is the one that seems most distressing.

Another cause for crying in early life which is frequently overlooked is the presence of a hernia, and the usual method of trying to restrain an umbilical hernia is hardly a less potent cause of discomfort than the hernia itself. The time is rapidly approaching when no one will use a button and pad with pressure for this purpose, any more than they will use the hard unyielding, quickly outgrown truss-makers' truss in order to retain inguinal herniae in infants.

The ear is such a frequent cause of pain in babies that it seems hardly necessary to call attention to it. The babies who have earache, however, can hardly be called uncomfortable babies for their distress is so potent and their cries so piercing that the presence of the ear trouble is rarely overlooked. Nevertheless, the usual underlying cause for earache in babies, the adenoid, is little thought of; and yet, not only is it the progenitor of ear abscess, but it, in itself, is the cause of much sleeplessness, irritability, and of many uncomfortable hours. Its presence often so interferes with the infant's meal at the breast that the baby goes on a strike and refuses to take food at all, or its meals are so disturbed that it develops indigestion and the train of discomforts and ills that follow in the wake of indigestion.

However, before discussing indigestion in the young baby as a cause of discomfort, I would like to call your attention to what I consider the commonest cause of crying and distress during the first three-fourths of the first year,—that is a fissure in ano. During the last five years, quite a third of all the children that I have been asked to see in consultation supposed to be suffering from colic or indigestion have had this condition, either independently, or accompanying some digestive disturbance. It is not necessary for the fissure to be very recent, or for the rectum to be much inflamed. The presence of the fissure very often gives rise to a marked hypertrophy of the sphincter, a condition often accompanied by spasm. Such babies give all the clinical signs of colic, drawing up of their legs, hard distended abdomen, and the saturnine smile, and all the other evidences of chronic distress. An experience as resident physician in a hospital for rectal diseases has led me to believe that the pains accompanying fissure and spasm of the sphincter and other acute and subacute rectal irritations are not exceeded by any other pains within the range of human experience.

Very recently, while watching Dr. Yerington's investigation of lues in children undertaken in our clinic, I have been impressed with the possibilities of inherited lues as a cause for distress and crying in babies, not only in those babies who show florid

signs but in that other class which has little or no skin manifestations and which produces, in later childhood, the cases of tardy syphilis. Such a case was that of an infant who was brought because of discomfort, crying, and lack of gain. The child was reputed to have weighed nine pounds at birth, I saw it at four months, when it weighed less than ten. It had a very fine pale skin, with an abundance of hair, not the least sign of rash or other lesion. The complaint was that the child refused to gain, and was constantly uncomfortable at night, while fairly quiet during the day. There was no vomiting, a daily stool which was well-digested, smooth and yellow. The most careful consideration of energy needs which were abundantly supplied, produced no resulting gain in weight. Without much expectation of result, for the father, a thoroughly reliable man, had denied syphilitic infection, a Wassermann test was made. The report was triple x positive. Kept on the same food as before, the child gained 2 ounces a day after the injection of 1/30 gm. of salvarsan into the vein, and this improvement in weight was accompanied by a complete cessation of discomfort and a steady progression of the child towards health and comfort.

Of course, in spite of the numerous causes for discomfort which may be overlooked in the belief that all discomfort arises from errors in digestion, it still remains true that the greater part does arise from this cause; and in the case of the breast-fed infant, it is sometimes difficult to be sure whether or not overfeeding or underfeeding is the trouble. However, in my experience, it is rarely the latter. It is unfortunate that the older teaching as to the number of meals a child should have from the breast, while abandoned everywhere else in the civilized world, is still predominant here. Instead of wondering that so many children are uncomfortable when receiving ten breast-feedings a day, we should wonder that any do well, for there is no doubt that much discomfort arises from this frequency of feedings. It is a well demonstrated fact that the constant irritation of the breast so alters the breast milk that it becomes uncertain in composition, often higher than it should be in fat, and sometimes lower. Furthermore, the constant disturbance of the mother wearies her, and if one fact is well demonstrated, it is that the tired or over-wrought woman cannot secrete healthy breast milk. Variot, in his classical work on the nursing, states that whenever a wet-nurse in his hospital for sick children had a night disturbed by an upset in her own child, that invariably, the child she was foster-mothering had an acute digestive upset with discomfort. It is especially true here in California that women are readily excited and wearied, especially women of the Jewish race, and very many babies who are the victims of pain and distress can be saved that discomfort by insuring tranquillity, diversion, and a full night's rest to the mother, and on the plan calling for ten feedings in twenty-four hours, this is utterly impossible with a result that the milk disagrees and the worried baby further disturbs and distresses its mother, and the vicious circle so

set up produces as an end result, early loss of breast milk and the necessity of resource to artificial feeding.

Furthermore, I feel that there has crept into our management of babies a very vicious practice, and that is the over-regularity that is so often insisted upon. In hospitals where there are a number of babies, as a matter of necessity, one must have regular feeding hours; but in the average home, with the average intelligent mother or good nurse, it is not good practice to attempt this regularity, and it is far from wise to wake a child in order to feed it. If we insist upon a minimum interval between feedings of $2\frac{1}{2}$ or 3 hours and allow the baby to feed when he will and sleep when he will, he usually will provide himself with five or six meals in twenty-four hours, rarely with seven; and his progress will be steady and his life a comfort to himself and his family.

Underfeeding from the breast is usually evidenced by whining discomfort, while the baby who seems to be urgently hungry, crying and shrieking, rolling his head from side to side, waving his hands and legs and often chewing on his fingers until they and his lips are sore, and who gives the impression to his attendants of intense hunger, is most often not at all hungry; but is suffering from an acute indigestion, probably a hyperchlorhydria leading to heartburn, which his little brain can only interpret as hunger. The really hungry child is rarely insistent. However, without doubt, there are certain cases in which the child receives insufficient food in such form that it gives rise to flatulence and green stools and much distention of the abdomen, blueness about the lips, and sleeplessness. This condition is difficult to tell off-hand from overfeeding. But if one will make it a practice in such cases to weigh the child before and after the nursing, it is a very easy matter to determine whether the little one is getting enough food or not.

A breast-fed baby should get about $1/50$ of its weight at a feeding, or a little more than $1/10$ of its weight in food during the twenty-four hours. This rule was laid down by Apert and seems to be a very useful guide when we are in doubt as to the sufficiency of the daily ration from the breast. Presuming that a baby is getting an insufficient breast ration, less than $1/50$ of its weight at a meal, it is not even then indicated to wean the child. Modern practice dictates that the time of nursing should be limited, that both breasts should be used at each nursing, and that the child be offered the bottle at the end of each period of breast feeding. Formerly we allowed two or three nursings a day and gave two or three bottles, but this plan is much less satisfactory. It is well, however, to omit night nursings and let the mother have a good ten hours sleep, for on this sleep the grade of the breast milk very largely depends. Also, one might interject that there is no better way to increase the quality and amount of breast milk than by giving the mother a course of freshly made Blaud pills with or without laxative as her need dictates. As to what should be put in the bottle, used to augment

the breast feedings, that will vary with the physician's preferences. Personally, I like a whey cream mixture, making it from 2% to 3% fat, and about 6% sugar, milk or malt.

No matter how earnest we are in our attempt to maintain the breast milk, there will be many cases in which this is impossible, and many others in which we will find babies who have been put on formulae by nurses or mothers without our consent, and who are become intolerable burdens because of distress consequent on indigestion. In a considerable experience, having seen a great many babies fed by a great many men on a large variety of formulae, I have come to the conclusion that the feeding an infant with a formula too high in fat is the commonest error; and next to this comes the too early feeding on a cereal decoction. The supposition that was formerly generally accepted that the ingredient of milk most difficult to digest is the casein is undoubtedly an error. However, it is equally undoubted that there are cases in which a fault in casein digestion occurs and renders the child most unhappy. But these cases are so infrequent, that in looking over my work for the last few years, I can recall not more than half a dozen. The distress from fat is so frequent that I will detail the case of a baby prematurely born at the 8th month which weighed 6 lbs. It was breast-fed for about 10 days when the milk failed. It was then given a weak dilution of milk, cream and water with sugar of milk, fat about 2%, and did fairly well, gaining one-half pound in a week. The attending physician then attempted to increase the strength of the mixture and the child began to cry and kept on crying practically without ceasing day and night. Malted milk was tried and seemed to make the condition worse. A return was made to a milk formula in which malted milk was used in place of milk sugar. While there was some improvement the child was still unhappy. Various changes were attempted and I saw the child first in its 7th week, when it had a weight of but a few ounces more than its birth weight. The stools seemed to be fairly well digested, homogeneous and rarely green. My first thought was that we were dealing with one of the rare cases of proteid intolerance, but on a whey cream mixture with 2% fat, the child was even more uncomfortable than it had been before and yet this mixture is one that, properly used, will restore comfort to most young babies suffering from indigestion, and has been successful in at least 8 out of 10 cases in which I have used it. I would say in passing, however, that in the beginning of such a feeding, it is better to use whey without any cream for 24 hours and on the second day use 1% fat, the third, $1\frac{1}{2}\%$ and come to 2% fat on about the fourth day. This 2% is the limit of tolerance for most uncomfortable infants. In a few instances the fat may be increased up to 3% or $3\frac{1}{2}\%$.

But to return to the infant we were discussing, she was tried on 1%, then on $\frac{1}{2}\%$ and then on $\frac{1}{4}\%$ fat, always with distress. Finally, we came to use skimmed milk in $1/3$ dilution with milk sugar. Now, this, of course, is not a food that

will supply the growth needs of a child, nor yet its energy need, and with some hesitation we added a mixture of dextrin and milk sugar used for feeding older children. Fortunately this was well tolerated, and under this feeding the child immediately became comfortable and began to sleep as a child should, 14 to 16 hours in 24. However, she only maintained her weight and did not gain. An attempt was made to increase the fat, and about $\frac{1}{8}\%$ fat was added in the form of cream, and the discomfort that ensued was extraordinary. Fortunately, these children tolerate carbohydrates pretty well, and we are getting a small gain by using an increased amount of the dextrin milk sugar mixture and milk up to the concentration of about $\frac{1}{2}$, that is, one part of milk to one part of diluent. For most babies this is not rational feeding, but in this case it is rational.

There are a number of histories in our case books which parallel this, but to show how empirical the matter of feeding is, while feeding this baby I was called to see another, in which the case history so far as I could make out was identical with this one save that the child was not premature, weighed 9 lbs. at birth and had gained 2 lbs. in its first 6 weeks and had been uncomfortable for only 2 weeks. There was here a history of undoubted overfeeding with fat with the characteristic signs. The success of the feeding outlined above led me to try it in this instance with a result that the bad conditions were very much exaggerated. We then used the whey cream, beginning with 1% and running it up to 2% within 48 hours; since that time the child has gained steadily in weight and has had no distress whatever until the mother attempted to increase the fat, abruptly running it up to 3%, when the whole array of symptoms returned. However, after 24 hours on the 1% it became comfortable and will go along well on a 2% or $2\frac{1}{2}\%$ whey cream mixture.

A detail of some importance in the preparation of whey cream mixtures might be mentioned here. If the ordinary 4% dairy milk is put in a quart bottle, and the cream allowed to rise, the first 6 oz. removed with a Chapin dipper will contain 16% of fat, 1 oz. of this in a pint, that is added to 15 oz. of whey, will make a 1% fat mixture, 2 oz. to 14, 2%, and so on.

Another common origin of distress at this age lies in the formula that calls for an excess of starch or sugar. The latter most frequently is one in which sweetened condensed milk is an ingredient, and the former, one in which a food of the cereal type is used. Both of these errors in regimen lead to chronic distress of moderate degree very often accompanied by vomiting of sour, watery material from 1 hour to $2\frac{1}{2}$ hours after a meal. Such formulae, too, often give rise to fermentative stools with excoriation of the buttocks and of the anal canal; irritation and inflammation of the latter may take place and be a cause of much discomfort even when the skin of the buttocks is sufficiently tough to resist excoriation there.

In mid-infancy and later infancy there is a very common disturbance of bottle-fed children which

shows itself in extreme constipation with fecal masses, which when passed, are characterized by nurses and mothers as "like marbles," very white or perhaps putty-like. Occasionally, when very rich milk is used, these masses will be greasy, crumbly and with the foul odor of fatty acids. Children with this form of constipation are restless, cry easily, do not sleep well, and very many of them have the habit of sleeping on their knees with their nose buried in the pillow. The cause of this is, invariably, the same thing; a larger amount of milk than the child can digest properly. The constipation is the result of soap formation when the high fat milk is used, and there is also present a lot of free fatty acid. The indication here is to reduce the amount of milk, increase the amount of carbo-hydrate. Usually, it is preferable to make this carbohydrate increase in the form of dextrin if need is shown before the 10th month. After this, it is probably better to use cereal gruels, with eggs, fruit pulps, and meat juices to replace part of the milk. In this connection, it is well to emphasize the fact that at no age does a child need more than 32 oz. of milk in 24 hours, and that from the 10th month on, 5 meals a day is as many as a child should have; further, that when a child's energy needs require as much as 32 oz. of milk in 24 hours, it is high time that it was receiving a diet augmented by such things as cereals, zwieback, meat juices, eggs, and so forth.

At the age in which the picture just detailed is common, one also encounters a good deal of discomfort and a great many babies who cry because of bone or muscle tenderness. The picture we have just been considering, may be, and probably is, one of the early stages of rickets, but slight degrees of rickets with mal-nutrition are not at all uncommon, even in the absence of such a clinical picture, and must always be thought of when we are confronted by an uncomfortable baby more than 8 months of age. And it is during this time, too, that the tenderness of scurvy makes itself evident, and although this is not a very frequent finding, it may present a very puzzling problem. I have seen cases in which the subperiosteal infiltration instead of appearing in the usual sites, along the lower epiphyses of the femur or about the wrists, occurred along the sacral bone and the ileum. I have also seen patients in which there was no sign of scurvy in the bones, and only the spongy gums, a few ecchymoses where a tight diaper had been pinned, and a hematuria gave evidence of the cause of the child's persistent crying.

A baby with an intussusception can hardly be classed with an uncomfortable child, but I have seen one instance in which a child of 14 months had been crying for a number of days before it began to vomit and before a physician was consulted. Of course, the child had presented the picture of apparent shock and the cry was not continuous, but spasmodic and repeated, and of a very sharp, ill-sustained character. Another child that was brought to the Lane clinic because it was unhappy was found to have an ischio-rectal abscess

which had been undiscovered. And it is not at all infrequent to find that older children, irritable and unhappy, are the victims of a rectum which partially prolapses and then retracts without being discovered.

Did time permit, there are many other conditions which might be cited as causes of discomfort. Those mentioned have been chosen in order to emphasize the need for a wide investigation when we are dealing with these crying infants. But before closing I must draw your attention to a very frequent and yet rarely recognized cause not only of distress, but of real disability on the part of infants during their second year; that is the inability properly to digest starch. A very large number of infants of this age brought to the pediatricist show a greater or less degree of starch indigestion which results in diarrhea or, in some instances, constipation with fermentation in the intestine that produces the protuberant belly so easily recognized. With this goes a high degree of acidity of the urine, not infrequently acetonuria, and as a result of this acetonuria, irritability, restlessness, broken sleep, a halt in or a loss of weight, and a condition that is alarming to the parents. These children suffer from pain about the umbilicus, and are often among the most uncomfortable little human beings with which we have to deal, and they are not only themselves uncomfortable, but because of their irritability, they make everyone who comes into contact with them equally uncomfortable, and yet in the whole realm of therapeutic endeavor, there is no class of case that so readily responds to proper regimen and treatment. Most often, these children are called delicate, it is supposed that their appetites are so frail that they must be fed whenever they desire to eat, with a result that in their case, hunger never comes to the aid of digestion. They are the victims of mistaken kindness, forever nibbling at some food. A restriction to three meals a day, limitation of starch, or its presentation in an easily digestible form with the exhibition of diastase for the digestion and iron to remedy the anemia almost always present, will make these little ones rapidly comfortable and rosy.

In conclusion, much of the discomfort suffered by infants is needless and promptly remediable, but the many causes that may lead to distress must be kept in mind and a diagnosis reached by exclusion before the cause can be eliminated with certainty.

DEATH FOLLOWING AN ANT BITE.*

By T. C. EDWARDS, M. D., Salinas.

On April 18th, 1913, a little girl four years old living in the mountains ran into the house complaining that something was biting her. Upon investigation it was found that she had been bitten or stung upon the chest in several places by a large red ant.

The child was robust with an excellent family history, four great-grandparents still living. That afternoon she complained more or less of the bites but was about as usual the next day. Three or four days after she was bitten her mother noticed that the places where she was bitten had turned

bluish and were about the size of a split pea. On April 24th, six days later, she vomited, complained of being cold and her mother noticed small spots coming on her body and extremities which later turned blue.

That night she was "feverish" and on the 25th she was brought to town. She had an axillary temperature of 103.8°, pulse 144, resp. 24. The temperature varied from 101° to 105°. Pulse never below 130, usually 150; resp. 30-40.

She was suffering from a purpura hemorrhagica of a very severe type. She was bleeding from the nose, mouth, stomach, bowels and urinary tract. She was given arsenic and iron, calcium chloride and gelatine with no improvement. I drew a few ounces of blood from the father's arm and gave a half ounce of serum hypodermically which was repeated twice. There was no blood in urine after second dose. She grew steadily worse, however, and died on April 30th. The last three days she was very sore and cried when moved. I find that there has been little written about ant bites and nothing about the venom.

Ants are somewhat like bees. The venom is secreted in the posterior part of the body and in those ants that have stings the venom is injected into the tissues with the sting. In those that use their mandibles as a means of attack the venom is deposited in the bites made by their mandibles, the ants doubling up so as to bring the posterior part of the body immediately over the injury and the venom is squirted into the cuts. In Costellani and Chambers' *Manual of Tropical Medicine*, concerning tropical ants, we read, "The venom is well known to contain formic acid but there must be more than this in the venom of the tropical species, though nothing is known on the subject." Mention is made in the *London Lancet*, Jan. 10, 1914, of a practice among some tribes of Indians of using the dried and mashed bodies of red ants to poison their arrows, but no mention is made of the character of the symptoms produced in those injured by these missiles. Mention is made of symptoms sometimes produced by tropical ants such as chill fever and sometimes paralysis. Reptiles and small animals are said to be killed by being bitten or stung by ants. A brood of young ducks was killed near where my patient lived by being bitten or stung on the feet. One of our prominent stock men who has interests in the Yuma Valley, Arizona, informs me that many suckling pigs are killed there by a large ant. Two letters from the Yuma Valley confirm this statement. The writers both say that the pigs sometimes die in a few hours, but usually live two or three days and finally die with the hind quarters paralyzed. One writer says these same ants destroy alfalfa and grain for a short distance around their holes. London purple, bisulphide of carbon and cyanide are used to kill these ants.

Dr. Margaret Hamilton Smyth of the State Hospital at Stockton reports a pet chameleon killed in a short time by eating a red ant. The symptoms were the same as in the pigs, viz., a paralysis of the hind quarters.

Not knowing of these symptoms I made no investigation to determine whether my little patient had any paralytic condition or not.

Dr. L. B. Bates, bacteriologist in the Ancon Hospital, Panama, has done some experimental

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

work on ants to determine whether they will convey pathogenic bacteria and if so how. His experiments show that ants fed on typhoid and other bacteria must destroy them as no bacteria are to be found in the alimentary canal of ants so fed. He attributes this to the large amount of formic acid to be found in their bodies. The bacteria are, however, carried on their feet and deposited on culture plates over which they have passed. The development of purpuric spots first at the points of injury and later in other parts of the body would seem to show a relationship between the injury and the disease. The time elapsing after the bite before constitutional symptoms arose argues in favor of infection of bacterial origin. Was it, then, some unknown bacteria or some unknown venom that caused the symptoms or were the symptoms simply a coincidence?

The symptoms somewhat resemble Rocky Mountain spotted fever, though no cattle from infected districts have been brought into this range.

The venom of rattlesnake has an action on the blood somewhat similar. That is, it so affects the blood as to cause extravasations, but these are limited mostly to the extremity that is bitten and contiguous parts. Besides, there are active and progressive symptoms immediately following snake bite. Ordinarily any toxic drug or venom, so far as I know, produces symptoms very shortly after its introduction into the circulation and the process of elimination begins at once. If the system is not overwhelmed, the venom is partly destroyed by the psychological action of the blood and partly eliminated, until health is restored.

In our case two or three days intervened between the cessation of local symptoms and the advent of constitutional symptoms. But there were patchial or purpuric spots at the site of the original injuries before constitutional symptoms appeared, and the constitutional symptoms were present before any new spots were seen and before there was any bleeding from the mucous membranes.

Is it possible that any venom might produce in susceptible individuals a slowly advancing destruction of the coagulating elements in the blood which are only manifested in constitutional symptoms after several days, or was there some other infection that did this?

Whatever may be the answer to these questions, our little patient was profoundly intoxicated and lost her life as a result of such intoxication.

INTRACRANIAL PRESSURE.

By HOWARD C. NAFFZIGER, M. D., San Francisco.

The statement is often made that nerve cases are discouraging. It is said that they are very interesting in a diagnostic way, but that there is not much of value in treatment. The interest is too often confined to the anatomical or pathological findings. There is surely much less ground for such remarks now than ten years ago. Treatment medical and surgical has lagged behind diagnosis more in this than in any other department of medicine.

The great majority of all organic nerve disorders that are benefited by therapy can be divided into two classes. First, syphilis of the nervous system; second, surgical conditions of the nervous system. The treatment of brain and spinal cord syphilis is notoriously unsatisfactory as compared with syphilis of most other parts of the body. It is true that some of the syphilitic nerve cases do not respond at all to treatment. It is equally true that many non-luetic cases are needlessly saturated with iodides, mercury and arsenic. Since this treatment is the only medical resource we have, these patients are overwhelmed with the drugs, whether they are syphilitic or not. As a result in non-specific cases valuable time is lost. Even in specific cases, operative treatment must still be kept in mind.

A young woman with brain syphilis some time ago came to my notice. This woman had been subjected to a most strenuous course of medical treatment. During this time her vision had become so impaired from the optic neuritis that little was left. Following a decompression for the relief of this symptom marked improvement followed. In the course of weeks the results of medication began to show and a subsidence of all symptoms followed. The only relic remaining was much impaired vision. An earlier decompression in this case would have saved most, if not all, of this impairment. Even in the definitely syphilitic cases, such as the one quoted, it is not unusual to find it necessary to employ surgical means to remove a gumma or arrest a rapidly progressing optic neuritis until effects of medication are obtained. The possibility of surgical relief is too late a thought. The number benefited by surgical means is rapidly increasing.

The mechanical conditions which can be remedied by surgical means are then of greatest importance to recognize, and it seems that in the diagnosis of neurological and general medical conditions as well, too little attention has been paid to them. Attention is focused toward making a correct anatomical and pathological diagnosis and valuable time lost, while the urgent symptoms are not given the importance in the clinical picture which they deserve.

A thorough understanding of intracranial pressure is necessary. It is the great guide to treatment in most surgical brain conditions.

Intracranial pressure in its different stages presents varied pictures. Recognition that there is increased pressure is not difficult in the great majority of cases. When it is present immediate treatment must be instituted. Surgical intervention is often required and should always be considered.

Peritonitis has a direct relation to diseases of certain abdominal organs. It demands immediate treatment irrespective of the point where the infection began. Likewise intracranial pressure has a relation to many diseases of the nervous system and demands immediate treatment without regard to the local lesion present. Delay often means blindness or death.

In the abdomen we may divide the signs and symptoms of a ruptured appendix first into those indicating a peritonitis; second, those indicating by

history and location the probable cause of it. The same is true whether the trouble is in the gall-bladder, the stomach or the pancreas. The point is that to a local lesion whether it be in the abdomen or in the skull we have added a menacing widespread one. In each case urgent treatment is indicated. The intracranial pressure associated with or dependent upon the local lesion present is the urgent thing and is the first to be relieved. While the abdominal condition usually has that attention which it demands, the intracranial tension is left to continue its course with disastrous results. This neglect is due most often to the fact that signs of pressure are not recognized as such and correctly interpreted.

Pressure manifestations vary tremendously and may show little similarity between acute cases and chronic ones. Between these are varying grades. A host of thorough experimental workers have written on acute intracranial pressure and its accompanying physiological responses. A certain picture has been built up for compression and well recognized. What we do not recognize is that this is the picture of *acute* compression and no other. It is not the picture of chronic compression. In our clinical cases with chronic pressure we should not expect these findings and we do not get them.

The symptoms presented in a case of cerebral hemorrhage with acute compression are entirely different from those in brain tumor, although the pressure in each at the time may be quite the same. Many texts and many persons remark a slow pulse and high blood pressure as being of great value in a diagnosis of brain tumor. These are not at all common in brain tumor. They are rare—so rare that when they occur we should look for some independent general systemic condition to account for them. They are typical signs of acute compression, not of chronic. Late in the course of brain tumor an acute compression may be added to the chronic compression and then these symptoms appear.

In acute compression the slow pulse, raised blood pressure, the Traube-Herring waves, irregular types of respiration, headache, the half-conscious irritability, the tossing restlessness, the drowsiness and stupor or coma are all most valuable symptoms.

In chronic compression are the symptoms given as those of brain tumor—namely, headache, choked disc, nausea and vomiting. These are, of course, strictly speaking symptoms of chronic intracranial pressure. These are all increased by those acts which still further increase intracranial pressure, as straining, sneezing, coughing, stooping, etc. Dizziness and convulsions may also be expressions of the condition. Engorgement of the superficial vessels of the eyelids and scalp have the same significance as engorgement of the retinal vessels. Symptoms less often noted, but common and characteristic, are nose or forehead itching and rubbing, yawning, hiccoughing and sighing. As far as we know, these have no localizing significance. Drowsiness, irritability and mental dulling may all be effects, but appear late. In children separation of the sutures, a cracked-pot percussion note and pressure

atrophy of bone, overlying convolutions may be found. It has come more than once to my notice that with the presence of many or all of these signs of chronic compression that doubt has been expressed as to the presence of pressure in the absence of a slow, full, bounding pulse. This pulse, the so-called pressure pulse, is indicative of acute pressure only. When such chronic cases are operated upon we find a terrific increase in tension with a tight, drum-like dura, yet with unchanged blood pressure.

Direct determination of pressure by lumbar puncture is a questionable procedure in all cases of greatly increased intracranial pressure and especially in cerebral tumor. In tumors below the tentorium it is now generally recognized to be absolutely contraindicated. With relief of pressure in the spinal canal the intracranial tension causes the brain stem to herniate into the foramen magnum with fatal result.

In the terminal stages of acute compression and in the later stages of chronic compression many diagnostic signs are lost. In the acute cases nearing the end the blood pressure will drop to normal or below and the pulse rate increases. The protective regulating mechanism of the individual is lost. In the chronic compression cases late in the disease it is common for the headaches and the vomiting to cease, a secondary optic atrophy which has followed a choked disc being perhaps the only sign of intracranial pressure, past or present.

Inferences drawn as to the amount of intracranial pressure present in a chronic case, judging from the severity of symptoms, are as of little value as is a judgment of the exact pathological condition of a kidney from a urinary examination. Consequently, slight changes in the optic disc may be all the findings in a case with well raised intracranial tension. Our judgment in this respect is most apt to be faulty in the case of very slowly growing tumors. With such cases even slight manifestations of pressure are of value, as in a recent case with an enormous brain tumor weighing 146 grams. This man presented focal motor symptoms referable to the right hemisphere. There had never been headache or vomiting. The eye grounds showed only a slight fullness and tortuosity of the veins, but no swelling of the disc. Yet this case at a first stage operation had definite increase of tension, and between the first and second stage operations the pressure was sufficiently high to herniate a large portion of the tumor through the dural opening. This then is a case with pressure, but almost without signs. Minute findings are of value.

Another, carrying a large tumor for at least four years, had no headache, no nausea or vomiting, and yet there was a choked disc of four or five diopters, and at operation tension was compared to that of a very lively new tennis ball.

In acute compression, for example, in fracture of the skull, the value of changes in the eye grounds is slight as compared with their value in chronic cases where they are perhaps the most valuable of all signs. Apart from the diagnostic help, we may have a clearer understanding of many systemic

diseases if we recognize intracranial pressure as a factor. The headaches and certain of the eye changes in nephritis, the nervous phenomena in hypertension, diabetes and alcoholic coma are closely connected with it. It seems probable that there are other factors at work, but we do know that relief of pressure causes these symptoms to subside.

A patient at the University Hospital was referred from the medical service. This patient was in an advanced stage of Bright's disease with usual symptoms. The eye grounds showed a marked edema of the optic nerve, with hemorrhages about the macula. The headaches were severe and the patient deeply stuporous. A decompression was followed by regression of the optic nerve edema, palliation of the headaches, with lessening of the stupor.

Another patient was seen in the deepest alcoholic coma apparently in extremis, with all reflexes abolished. Alcoholism may produce the so-called wet brain. A prompt lumbar puncture in this case with withdrawal of 30 c. c. of clear fluid was so efficacious that at its completion the patient was asking as to where he was and what had happened to him.

In meningitis we are too apt to forget that the infection is largely a self-limited one, and that, excepting those cases dying of a general septicemia or pneumonia, the great majority die from pressure ensuing on an acute obstructive hydrocephalus. In meningitis our aim is twofold: to combat infection and to relieve pressure.

Principle of treatment in all the varieties is the same, namely decompression. Decompression or relief of tension is one of our most reliable surgical principles. It is the factor in the opening of an abscess or the drainage of a peritonitis. The Edebohl's operation of decapsulation of the kidney is a decompressive operation. No doubt decompressions of the heart when enlarged and hampered by its hypertrophy will come into a greater field of usefulness. The principle of decompression is an old one.

Of all the symptoms of subacute or chronic compression, the one of greatest help, but apparently often misinterpreted, is swelling of the optic disc. With a blurring of its margins and a definite rise in its level there is pressure. This does not mean that the primary trouble is necessarily in the cranium. It may be a toxic manifestation of nephritis. Toxins may produce a brain edema or increased cerebro-spinal fluid secretion. Pressure is produced, however, with consequent eye changes, and this swelling of the disc is due to the intracranial pressure rather than to the direct effect of a toxin on the nerve. This is the important point, for we know that following relief of pressure by decompression or other measures this swelling will disappear. Swelling of the disc associated with even the slightest loss of vision makes it at once imperative that pressure be relieved to conserve eyesight, the only exception being those conditions in which it might appear in terminal phases of systemic disease.

Commonly the findings of the ophthalmologist

are at variance with those of the neurologist. Different interpretations are placed upon the same findings. Not infrequently the ophthalmologist will dismiss the findings, saying they are toxic manifestations. They do not always recognize intracranial pressure as a link in the chain. This fault must be due to the infrequency with which they check up the pressure findings at the time of operation.

The internist and the Roentgenologist who do not avail themselves of the information to be gained by frequent visits to the surgical amphitheatre are no more culpable than the ophthalmologist who does not avail himself in a similar way in surgery of the brain.

Discussion.

Dr. H. B. A. Kugeler—I have seen a number of these cases of brain trouble and I want to emphasize two points that the doctor has emphasized. One is the neglect of the choked disc, the neglect of decompression at the proper time, whether or not an exact diagnosis can be made, and the other point is the absurdity of antiluetic treatment because the patient has brain disturbance. If you have ever seen a gumma of the brain—they are hard, stone-like formations—and to think that any medicine that patient is going to take will dissolve that thing is about as absurd as anything we have had handed down in medicine. The only way those gummatous masses can be removed is by surgical treatment, and the only way you can treat a choked disk or relieve the pressure symptoms in the brain is to open that skull before the patient goes blind. I have seen within the last two years at least two patients that have been allowed to go absolutely stone blind without a thing being done to relieve their symptoms, and I think it is time that that sort of thing should stop.

Dr. Kaspar Pischel—I hope the ophthalmologists were not to blame that these patients (mentioned by Dr. Kugeler) were allowed to become blind. Only too often our advice of decompression is not followed. An early decompression can do an enormous amount of good. A short time ago I observed a case of papillitis caused by a tumor which could not be located. After the decompression the papillitis disappeared in about four weeks. I have another case of papillitis in mind in which decompression saved the eyesight and allowed the man to work for two years and a half before the angiosarcoma of the brain killed him.

Dr. O. Tobriner—I noticed the absence in this paper of ear findings in this condition—the examination of the semi-circular canals, especially worked out by Barany. In Vienna hardly a case goes to operation before being sent to the ear clinic for examination of the semi-circular canals and middle ear. More than 80 per cent. of the abscesses in the brain come from the middle ear. In cerebral tumor, situated in the cerebello-pontine angle, one of the first symptoms we notice is a change in the reaction of the semi-circular canals. Another early symptom we note in brain tumor is a slight degree of loss of hearing on the side of the tumor.

Dr. Naffziger, closing discussion—About the ear examination, we have gone into those tests as thoroughly as possible. We do not find them of much value in the diagnosis of general intracranial pressure. They are interesting, however, and of value as localizing signs. As they stand at present I do not think they come in as a factor in making diagnoses of intracranial pressure prior to the appearance of some of the other symptoms.

ECHINOCOCCUS IN CALIFORNIA.*

By J. R. SNYDER, M. D., Sacramento.

The most common cyst of the liver is the hydatid or echinococcus. The cause of the echinococcus cyst is the *tenia echinococcus*, a parasite found in the upper intestine of the dog, wolf and occasionally sheep. In California it is said that many cysts are found in the lungs of sheep; one instance was related to me in which a raccoon was killed and the hunter said that the liver was filled with "grapes." The ova enters the gastrointestinal tract of man with food or drink, where the capsule is digested and the embryo liberated. The larva has six hooklets as well as four suckers which aid it in boring through the tissues. It finds lodgment in the various organs, including the liver, kidney, lungs, heart, nervous system, etc. Of 1600¹ cases reported in German clinics, 820 were in the liver, 334 in the kidneys, 137 in the lungs, 122 in the nervous system, 42 in the heart and the rest in other organs. The cyst most frequently occurs between the 20th and 30th years, but it may be found at any age. It shows no preference for sex.

The disease is most common in Iceland,² where it is said that one-seventh of all deaths are caused by the echinococcus. In Europe it is not uncommon, in Great Britain and North America it is rare, the majority of the cases being in foreigners. Lyon³ collected 241 published cases in America in 1902, only one being in a native American.

After the parasite reaches the tissues it loses its hooklets and enters the cysticercus stage. In-

and growing cysts produce symptoms of tumor; physical signs of course depend on the situation of the growth. The tumor may form a distinct prominence and have a tense, firm feeling sometimes with fluctuation. Attacks of urticaria are not uncommon, especially when a cyst ruptures. A marked eosinophilia is usually present. The cysts are impossible to diagnose when small; when palpable there are suggestive features. They must be differentiated from carcinomatous tumors, from abscesses and from syphilitic tumors.

Superficial cysts may be removed entire; deep cysts are usually treated by formalization.⁵ The cyst is injected with a 1 per cent. formalin solution after evacuation. After the sterilization of the contents the cyst is freely incised and the germinal layer removed. Now the wall may be closed and the cyst restored to its original position. Suppurating cysts are treated like abscesses anywhere.

After a search through the "Transactions of the Medical Society of California" and the CALIFORNIA STATE JOURNAL OF MEDICINE, on file at the State Library, I was able to find but one case in a native American from California. This case was reported in May, 1904, in the CALIFORNIA STATE JOURNAL OF MEDICINE, from Los Angeles by Dr. C. W. Murphy.

Case History: R. B., Mexican, male, 26 years old, teamster by occupation. Came to the Sacramento County Hospital, January 13, 1914. Complained of fever and pain in the right hypochondrium. Patient was a native of Arizona.

Family history negative to tuberculosis, cancer or other tumors as far as the patient knew. Did not know about his parents at that time. He had always been well until about three months ago. Patient had been in Sacramento for two months, coming here from Oakland where he had been for four years. During the two years preceding this period he had worked on coastwise boats between San Francisco and Los Angeles. He came to California from Arizona about seven years ago. He had never been out of the United States.

Present illness began three months ago with intermittent pain in the right hypochondrium. It seemed to have no association with taking of food. Frequently radiated to the right shoulder, sometimes extending around to the back. Pain was severe, but patient continued to work until about four weeks before coming to the hospital. He said he had attacks of indigestion with the pain and that he sometimes vomited, usually was constipated. The pain became more severe and boring in character and the patient quit work and consulted a physician. The history covering the next three weeks is very vague. The patient appeared at the hospital January 13, 1914, at 4 p. m. He seemed to be in considerable pain, lay on the left side with knees drawn up, seemed to have lost some weight, was slightly jaundiced. Temperature 102 degrees F., pulse 92, respiration 24.

Physical examination showed eyes normal, reacted normally to light and accommodation, conjunctivae bile stained. Nose normal, tongue coated, teeth excellent, throat normal, no goiter. Lungs and heart normal. Abdomen, slight general rigidity which was more marked in the upper right quadrant. At the upper third of a line extending from the umbilicus to the costal margin, a round, hard, non-fluctuating mass presented; it was slightly tender on pressure. Liver was enlarged downward. Further examination negative. Blood examination, reds about normal, white cells 17,000. Differential count on 500 cells showed but two

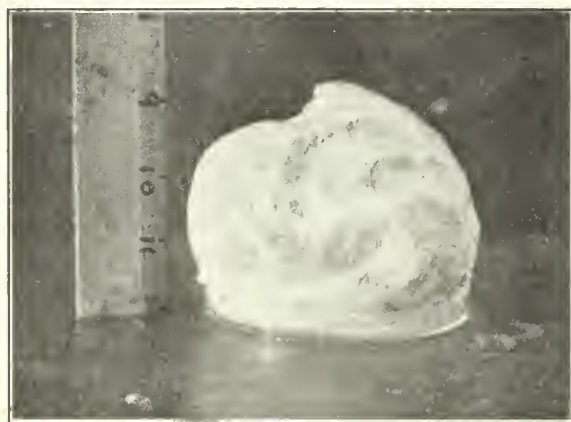


Fig. 1. Uninfected cyst removed at necropsy.

inflammatory changes follow and a sac forms which has three layers, externally a fibro-cicatricial layer, an intermediate layer, and finally a germinal layer from which may develop scolices, and these in turn may form the daughter cysts. The contents of the cyst consist of a clear, colorless, transparent fluid, non-albuminous, specific gravity 1.005 to 1.016. If the cyst is fertile it will contain daughter cysts. The heads or scolices of the parasites are found free in the fluid. The cysts of the liver are generally in the right lobe and in about 90 per cent. of the cases are solitary.⁴

Small cysts may cause no disturbances, large

* Read before the Sacramento Society for Medical Improvement, April 21, 1914.

per cent. eosinophiles. Urine, amber, acid, 1.024, small trace albumin, no sugar, no casts, no blood, no pus, no bacteria, a small amount of bile.

A provisional diagnosis of gall stones with infected gall bladder was made. Hydatid cyst was mentioned but not expected. Patient was prepared for operation the day after admission and was operated upon January 15. Right rectus incision was made over the gall bladder region. A round white mass about two inches in diameter presented. It was situated on the anterior surface of the liver about two inches above the gall bladder. The capsule was punctured with a trochar and about five ounces of a clear fluid containing sago-like granules was withdrawn. Enucleation of the cyst wall was accompanied by profuse hemorrhage, so profuse in fact that the patient seemed to be in considerable danger. Fifteen cigarette drains and two rubber tubes surrounded by iodoform gauze were sewed in.

Patient's temperature rose steadily for three days when it reached 104.2° F. The next day his legs showed some edema. Temperature began to come down, but pulse steadily rose. Abdomen became distended. Leukocytosis remained high and eosinophiles increased after the operation. Patient died January 27, eleven days after the operation, thirteen days after admission.

Necropsy: Twelve hours post mortem.

Peritoneal cavity; peritoneum smooth and dull. Cecum and appendix apparently normal. Many adhesions between liver, stomach and spleen. Large abscess between these adhesions and the diaphragm, abscess being connected with a large abscess in the posterior part of the left lobe of the liver. The abscess was surrounded by a capsule like those around the cysts. On the surface of the right lobe of the liver and posterior part there presented another cyst wall. This we were able to dissect out entire. (See cut.) Gall bladder was normal. Several small abscesses in the spleen. The transverse colon was bound to the stomach by fresh adhesions. Heart apparently normal. Lungs showed some edema. Kidneys both large and showed evidence of cloudy swelling. Further examination negative.

Diagnosis: Large infected hydatid cyst in left lobe of the liver, one large cyst in right lobe removed, another large cyst in right lobe. Edema in both lungs. Acute parenchymatous nephritis.

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A BRIEF SUMMARY OF THE REGISTRATION LAW AND THE REQUIREMENTS FOR ACCREDITING SCHOOLS FOR NURSES.*

By ANNA C. JAMMÉ, Director, Registration Department.

Chapter 319 of the Statutes of 1913, known as the Nurses' Registration Act, became effective August 20th. In accordance with the provisions of the Act, the State Board of Health established a bureau for registration of nurses, the work of which was started early in October.

The law provides for the examination and registration of applicants who are graduates of accredited training schools for nurses and for the issuance of a certificate which will entitle the nurse to be known as a Registered Nurse. It also places within the State Board of Health the power

to revoke a certificate for any reason that renders a nurse unfit or unsafe to care for the sick, after full and fair investigation of the charges made against her. A penalty is attached for any person not holding a certificate of registration, who uses the term "Registered Nurse" or who uses the letters "R. N." after his or her name or for violating any of the provisions of the Act. There is provided a period of waiver until July 1, 1914, during which time applicants who are graduates of a reputable training school, connected with a general hospital, may be registered without examination.

The purposes of this law are:

1. To provide a definite educational standard of teaching and training in schools of nursing and to fix the minimum requirements for graduation.
2. After July 1, 1914, to register upon examination only graduates of schools maintaining the standard established.
3. To establish and maintain a public register of nurses.

The law states that the training school must be attached to, or operated in connection with, a hospital or hospitals. The hospital therefore becomes the first consideration.

In the establishment of a school for nurses, the hospital should offer adequate facilities for maintaining a school. These facilities include not only the capacity of the hospital, but the daily average number of patients, which if too restricted in numbers—that is, say below twenty-five—can not afford the requisite opportunities for observation and experience.

The hospital is and always will be the only training place for nurses. The school is not an adjunct, but has a definite relation to the hospital in its function, which is twofold—first, that of providing a nursing staff for the hospital, and, second, that of training and educating nurses for the community.

The law further states that a general training should be given. The nature of the service in the hospital, therefore, becomes the second consideration. Provision, however, is made that this training shall be obtained in a "hospital or hospitals." With the increasing tendency toward specialization, the difficulty of each hospital in meeting the requirement of general training may be overcome by affiliation with other hospitals, and, therefore, gain for the student a practical groundwork in the major requirements, medicine, surgery, obstetrics and pediatrics.

The period and the course of study is definitely laid down by the law on a systematic theoretical and practical course covering three years.

The theoretical course of instruction contemplates a properly graded schedule covering the subjects already mentioned.

The practical course of instruction implies an experience and a just division of time in each department of service, embraced in a general training, which may be as follows:

1. Preparatory course.....3 months
2. Medical nursing.....4 months
3. Surgical nursing.....4 months

* Reprinted, by request, from the March 1914 number of the Pacific Coast Journal of Nursing.

4. Operating rooms, dressing rooms and dispensary.....4 months
5. Obstetrical nursing.....4 months
6. Children3 months
7. Contagion3 months
8. Dietetics2 months
9. Night duty.....4 months
10. Vacation2 months
11. Open time.....3 months

In the establishment of a school and a definite curriculum of lectures, classes and demonstrations, the teaching staff and corps of lecturers and instructors becomes the next consideration. Upon the superintendent or principal of the training school and her assistants rests largely the clinical instruction of the students. That this teaching staff shall be adequate and prepared for the teaching of nurses will to a great extent be a guaranty of the fitness of the school to graduate women in nursing.

Instruction to be effective implies equipment and space. A class-room, lecture-room, a laboratory and a quiet study-room or library are at least essential to the fitness and dignity of a school.

On the requirements for entrance and the conditions of the home life of the nurse during her course of training, the law is silent.

Upon the school, therefore, rests the responsibility of the character of the women admitted. If the educational requirement is low, the character of the instruction is usually of low grade and acts as a deterrent to the discriminating applicant. We may concede that the requirements of preliminary education should be at least what is required in other technical schools of the State, viz.: a high school course or its equivalent. This should insure the capability to grasp intelligently the subjects involved, and would bring a maturity of mind and physique to the responsible and exacting demands of nursing.

The living conditions and social life in the nurse's home should compare favorably with that of the college and boarding school. The government of the home may be largely in the hands of the students themselves, who should be able to maintain its dignity and tone.

In establishing a standard for accrediting schools, it will at first be impossible to make the requirement as high as that maintained in schools favored by location and facilities, both educational and financial. By establishing a reasonable standard it is endeavored to meet and assist the other schools in preparing their graduates for examination and registration.

Registration, however, will not guarantee a nurse nor vouch for the finer qualities of education and character that go to make an efficient worker in the many lines for which a nurse by her general training is peculiarly fitted. It is, however, evidence that she has received ample instruction in theory and practice.

Thoughtful women of education in selecting a career will be more likely to adopt that of a nurse when it has the advantage of state regulation and state protection. It will be borne in

mind that the demand is insistent and urgent, especially from surgeons and obstetricians for more thorough preparation, in the training school. Public health service is also making very strong demands, recognizing that the nurse has become an essential and indispensable part of public health work, especially tuberculosis, school nursing and infant mortality. Public health organizations are urging the training schools to provide instruction that will enable their graduates to render efficient service in the various fields of modern sanitary science. In many instances these organizations are placing at the disposal of the schools, facilities for study and practical training for student nurses, who desire later to engage in public health work.

In conclusion, it may be stated that the energies of the Bureau of Registration shall be directed towards the following objects:

1. To maintain a good ethical and educational standard in nursing.
2. To assist in improving and advancing methods of teaching in training schools.
3. To aid affiliation between schools and to encourage preliminary education, relative to the study of nursing in high schools and colleges.
4. To encourage the special preparation of nurses for teachers of nursing.

Patronize those who help to support your journal. Everything one might need is advertised within ITS pages. When you purchase, let the advertiser know you read his ad in the CALIFORNIA STATE JOURNAL OF MEDICINE.

SOCIETY REPORT

ORANGE COUNTY.

The following officers were installed at the Twenty-fifth Annual Banquet, May 5th, 1914: Dr. D. W. Hasson, Buena Park, President; Dr. J. J. Clark, Santa Ana, Vice-President; Dr. John Wehrly, Santa Ana, Secretary; Dr. H. S. Gordon, Santa Ana, Treasurer. After the installation Dr. Jos. M. King gave a very interesting fifteen minutes' talk on his recent European trip. Dr. John L. Dryer gave a short history of the Orange County Medical Association for the last twenty-five years. Of the eleven original members there were only three left, Drs. J. L. Dryer, C. D. Ball and J. P. Boyd—four of the eleven members died and four removed to other fields.

The following were elected as new members: Drs. Albert Osborne and W. W. Davis of Anaheim. JOHN WEHRLY, Secretary.

SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT.

Regular meeting May 19th, 1914, Hotel Sacramento, 8:40 p. m., President J. W. James in the Chair, twenty-five members present. Minutes read and approved.

The meeting was devoted to reviews of current medical literature. The following members gave reviews of the following journals:

many a long year a safe and satisfactory source of information for surgical diagnosis and treatment, based on the foundation of surgical pathology. It is not a manual of operative surgical technic, but tells when and how and how much surgery is required in a given condition. This concluding volume covers the following subjects: cardio-vascular system; lymphatic system; the neck; nose and accessory sinuses; ear, pharynx, naso-pharynx and larynx; lower air passages and esophagus; lungs and pleura; the nerves; scalp; skull and brain; spine and spinal cord; the jaw; skin and subcutaneous tissues; muscles; fasciae and tendons; bursae; bones; fractures and separated epiphyses; the joints; orthopedic surgery. With the possible exception of the section on orthopedic surgery, which cannot compare with either the American or even the German writings on this subject, especially as regards treatment and prognosis, every other subject is handled in a way to make it a worthy portion of a really valuable text-book on surgery.

G. H. T.

The Medical and Sanitary Inspection of Schools.

By S. W. Newmayer, A.B., M.D., in charge of the Division of Child Hygiene, Bureau of Health, Philadelphia. 12mo, 318 pages, with 71 engravings, and 14 full-page plates. Cloth, \$2.50 net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

In his treatise "Medical and Sanitary Inspection of Schools," Newmayer has quite thoroughly reviewed the work that has been done by the pioneers in this field. This book will prove of great assistance to nurses and doctors engaged in the actual work of inspection. It gives details of methods employed in examining school children for both physical and mental defects. This feature of the book is especially commendable. With the systems, charts and directions given, a governing body can inaugurate a system of inspection and sanitation, while the doctors and nurses can intelligently carry out its details. The methods employed successfully in Philadelphia and New York are described in detail and may serve as guides. The importance of skilful medical inspections is dwelt upon and the point is emphasized (as I think it will be demonstrated in other departments of medical activity) that the best medical men will not be available if their whole time is demanded. The importance of "a division of labor" is stated in urging that most of the routine work should be performed by nurses. In fact, nurses as inspectors are at least as valuable as physicians. Where funds are not available to pay nurses, their duties may be assumed by instructed teachers in the schools. If money is not available with which to pay doctors, volunteers may be secured. The deficiencies of the book are attributable to the immature development of the subject. Systems, methods and objects to be striven for are still in experimental stages.

S. B.

Kurzer Leitfaden der Psychiatrie für Studierende und Ärzte. Von Dr. Ph. Jolly, Assistenten an der Psychiatrischen und Nervenkl. (Geh.-Rat Prof. Anton) in Halle a. S. Bonn, 1914. A. Marcus & E. Webers Verlag. Preisbrosch 4. Gebunden 4.80.

This book takes a place between the large works of psychiatry and the small compendia. The author avoids theoretical discussions and deals in the main with well-established facts. The book is divided into two parts. The chapters of the first division contain a short review of the history, of the general etiology, symptomatology, diagnosis, pathology, prognosis and therapy of Psychiatry. This first part is exceedingly well written, particularly

the chapter on Symptomatology. The second division deals with the different forms of insanity following in the main the nomenclature of Kraepelin.

In describing the Dementia Precox group, the important work of Jelliffe, Hoch and Meyer in this country and Jung in Zürich are omitted. The psychogenetic mechanisms underlying the condition and Abderhalden's investigations in reaction ferments in these cases are not mentioned. The Paranoia group is rather superficially treated, while the author devotes a large space to Dementia Paralytica, a chapter very well written, dwelling upon the differential diagnosis and going into details in regard to the luetic origin and the importance of the so-called Four Reactions (Wassermann in the blood; Lymphocytosis; Globulin reaction; Wassermann in the liquor cerebrospinalis).

In the chapters on neurasthenia, hysteria and other psychoneuroses, the names of Janet, Freud and Jung are painfully avoided. One does not need to be a blind disciple of Freud to admit the great importance of his investigations for the understanding of the psycho-neuroses and also of the psychoses. The mechanism of the delusions of the insane, e. g., can hardly be explained without Freud's theories. The index of this book is remarkable for its completeness. In conclusion, the reviewer recommends the work as a valuable résumé, more for the use of those who are familiar with psychiatry than for the students and physicians unacquainted with this specialty. C. RENZ.

Diagnosis in the Office and at the Bedside. The

Use of Symptoms and Physical Signs in the Diagnosis of Diseases. By Hobart Amory Hare, M. D., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College of Philadelphia. New (7th) edition, thoroughly revised and rewritten. Octavo, 547 pages, with 164 engravings and 10 full-page plates. Cloth, \$4.00 net. Lea & Febiger, Philadelphia and New York, 1914.

As a modern diagnostic work this book is rather a disappointment, especially if one were forced to depend upon it alone. This is mainly due to the method of arrangement, it being rather questionable—in the reviewer's mind at least—to place the bulk of nerve diagnosis in the sections on the extremities and the skin, although from a purely symptomatic point of view it may be logical. This defect is obviated in a measure by a most voluminous index which occupies exactly 10% of the entire work. A minor fault is the occurrence of a considerable number of inaccuracies, chiefly in the form of dogmatic statements.

The book, however, is sketchily and most entertainingly written and contains a fund of information of that valued sort obtainable only from a preceptor of wide experience. Indeed, one gains the impression of coming into personal contact with the writer, a delightful feature which is unfortunately a minus quantity in most technical works.

As regards the illustrations a fewer number than usual of familiar faces are seen, although one or two are positively mediaeval.

On the whole the book is better adapted to the older practitioner who desires a short cut to diagnosis than to the student or recent graduate who has been trained in the more modern methods of routine history taking and examination.

L. H. B.

Theorie und Praxis der Blutentziehung. By Prof. Dr. Heinrich Stern, Verlag von Curt Kabitzsch, Würzburg. 1914. Preis broschiert Mk. 3.50, gebunden Mk. 4.50.

This interesting monograph deals with the his-

tory of the ages-old practice of blood-letting and its modern application in the light of present day knowledge. Varying from the height of popularity to the depth of unpopularity, venesection has touched both extremes several times during the years covered by written history. Its value to medical science must lie somewhere between these extremes, and we believe Prof. Stern has rendered a good service to present day therapeutics by again bringing to our notice this valuable remedy and its indications. The technic is simple and easily acquired. The field of application is limited to certain diseases of the respiratory, circulatory and urinary systems, and, secondarily to the nervous system. In addition, this very useful procedure is described in its application to eclampsia and various poisonings. The value of this brochure seems to lie in its message to the present day practitioner that this ancient and much abused means of relieving human ailments has not lost its potency for good even though its field has been much restricted.

Professor Stern's work, though evidently written by an enthusiast, contains a great deal of interesting, if not practically useful, material and shows a careful and comprehensive study of literature, both lay and medical.

G. H. T.

LUSK ON NUTRITION.

The Yale Press has now in active preparation "The Fundamental Basis of Nutrition" by Graham Lusk. In this concise and readable manual Dr. Lusk discusses the historical study of nutrition and modern investigation in that field. He includes very important statistics showing how men in different occupations should be variously nourished and how the maximum number of proteins may be obtained at a minimum cost. The whole presents the principles of nutrition which our generation has done so much to discover and in a form to benefit the layman. As the author says: "It seems as though mankind had a right to a knowledge of the value of the foods which a bountiful Nature has provided for his use. Even among educated persons one may hear the grossest errors of judgment regarding the nutritive value of a hen's egg and few of those who eat in restaurants realize that the greater quota of nourishment which is brought to them lies not in the specific dish served but in the bread and butter which ostensibly is presented as a gift."

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(This Department will be pleased to supply information concerning products passed or rejected by the Council on Pharmacy and Chemistry of the A. M. A., or submit queries to the Council when information is not available.)

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

SODIUM BIPHOSPHATE, Squibb.—This non-proprietary form of sodium acid phosphate has been accepted for inclusion with New and Nonofficial Remedies. E. R. Squibb & Sons, New York (Jour. A. M. A., May 2, 1914, p. 1401).

NORMAL HORSE SERUM with Chloroform as a Preservative.—Marketed in vials, each con-

taining 50 Cc. H. M. Alexander & Co., Marietta, Pa.

NORMAL HORSE SERUM without Preservative.—Marketed in vials, each containing 50 Cc. H. M. Alexander & Co., Marietta, Pa. (Jour. A. M. A., May 2, 1914, p. 1401).

EREPTON.—A meat product consisting largely of the amino-acids produced by the digestion of meat. Erepton is said to be useful in cases in which it is necessary to substitute a perfectly digested food for the product of natural digestion in cases of gastric or intestinal indigestion and for the purposes of rectal alimentation. Farbwerke-Hoechst Co., New York (Jour. A. M. A., May 16, 1914, p. 1559).

ACNE SEROBACTERIN, MULFORD. This is a sensitized acne vaccine. H. K. Mulford Co., Philadelphia, Pa.

COLI SEROBACTERIN, MULFORD.—This is a sensitized coli vaccine. H. K. Mulford Co., Philadelphia, Pa.

NEISSER SEROBACTERIN, MULFORD.—This is a sensitized gonococcic vaccine. H. K. Mulford Co., Philadelphia, Pa.

PNEUMO SEROBACTERIN, MULFORD.—This is a sensitized pneumococcic vaccine. H. K. Mulford Co., Philadelphia, Pa.

STAPHYLO-ACNE SEROBACTERIN, MULFORD.—This is a sensitized staphylo acne vaccine. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., May 16, 1914, p. 1559).

NEW BORNLYVAL.—New bornlyval is borneol isovaleryl glycolate, the isovaleryl glycolic acid ester of borneol. Being more resistant to the gastric fluids than bornlyval, it passes the stomach unchanged and is said therefore to be less irritating than bornlyval. Its properties are similar to those of bornlyval and other valerian preparations. New bornlyval is an almost tasteless and odorless liquid, insoluble in water. It is sold also in the form of Bornlyval Pearls, each containing 4 minims of New Bornlyval. Riedel & Co., New York (Jour. A. M. A., May 23, 1914, p. 1637).

LIQUID PETROLEUM OR "RUSSIAN MINERAL OIL".—A report of the Council on Pharmacy and Chemistry points out that petroleum oil was used as a medicine by the ancients and that the product "liquid petrolatum" is now on the market under a host of proprietary names and is official in most pharmacopoeias. It was at one time used in the treatment of tuberculosis and as an adulterant of fats and oils on the assumption that it was assimilable. It is now known to pass the system unchanged and has recently been highly lauded as a particularly harmless laxative in the treatment of habitual constipation. As the U. S. P. definition of liquid petrolatum permits the use of rather widely varying products and as there is some difference of opinion whether a light or a heavy oil is preferable, the Council recommends that physicians desiring the water white, non-fluorescent (Russian) mineral oil use the term *petrolatum grave* or *paraffinum liquidum*, B. P. if the heavy product preferred by Sir F. Arbuthnot Lane is desired; and *petrolatum liquidum laeve* if the light variety is desired (Jour. A. M. A., May 30, 1914, p. 1742).

ANTIMENINGITIS SERUM.—The untoward or fatal effects sometimes following the use of antimeningitis serum are probably due to the toxic action of the preservative contained in it or to increased intracranial tension due to its administration. The technic of its employment should be improved rather than its use abandoned. The dangers which may arise from its use are not to be feared as much as the disease itself (Jour. A. M. A., May 23, 1914, p. 1661).

PITUITARY EXTRACT.—The use of pituitary

extract as an oxytoxic must be considered in the experimental stage. A large number of cases have been reported in which untoward effects from the use of various pituitary extracts (including pituitrin) were obtained (Jour. A. M. A., May 2, 1914, p. 1420).

PANCREATIN.—Long and Huhleman report that mere traces of hydrochloric acid will destroy the ptyalin of pancreatin, that pancreatin of commerce—which often is not pancreatin but merely the dried pancreas gland—is practically devoid of lipase, the fat digesting ferment, and that its tryptic ferment is likely to be destroyed by the action of the pepsin and hydrochloric acid during its passage through the stomach (Arch. Int. Med., Feb., 1914, p. 314).

VALENTINE'S MEAT JUICE.—Four years ago an examination by the Council on Pharmacy and Chemistry showed that Valentine's Meat Juice was not a meat juice, but had the character of a meat extract instead, while on the basis of the claim that it was a meat juice extravagant assertions as to its nutritive value were made. The product being a meat extract, was practically devoid of nutrient qualities. As Valentine's Meat Juice is still widely advertised the Council deemed a re-examination important. This re-examination shows that in general it has the composition now as then, and that the same unwarranted claims are still made for it (Jour. A. M. A., May 2, 1914, p. 1419).

BROMIDIA (Battle & Co.).—A report of the Council on Pharmacy and Chemistry points out that while the name suggests bromid, Bromidia is essentially a chloral preparation. This nostrum illustrates the need of the Council's rule under which recognition is refused to pharmaceutical mixtures whose name does not indicate their most potent ingredients. While the chloral content of Bromidia has been given considerable publicity, yet the preparation is used both by physicians and by the public, without due consideration of its potent ingredient, as attested by the fatal results and the habit-formation which have resulted from its use. The Bromidia advertising propaganda first admits the presence of chloral, then it is argued that in Bromidia the evil effects of chloral are eliminated and in the end the impression is left that Bromidia is practically innocuous and may be given even in cases of typhoid and to children (Jour. A. M. A., May 16, 1914, p. 1573).

THIOL RE-ADMITTED TO N. N. R.—In 1913 the Council on Pharmacy and Chemistry directed the deletion from New and Nonofficial Remedies of Thiocol and Syrup Thiocol, Roche, because a preparation called Sirolin, containing Thiocol as its effective component and practically the same as Syrup Thiocol, Roche, was being advertised to the public. The Hoffman-LaRoche Chemical Works having furnished assurance that the public exploitation of Sirolin has been discontinued, the Council voted that Thiocol and Syrup Thiocol, Roche, be restored to New and Nonofficial Remedies (Jour. A. M. A., May 23, 1914, p. 1637).

IN ERRATA.

On page 128 (March issue) under New Members, A. B. Kern should be W. B. Kern.

On page 218 (May issue) under New Members, Emil C. Block should read Emil C. Black.

DR. VAUGHN IN SAN FRANCISCO.

In the early part of June, Dr. Victor Vaughn, President-elect of the A. M. A., visited San Francisco for a few days. It was the desire of the Directors of the County Society to entertain him at a dinner, but his stay was too short to make it possible. If the A. M. A. meets in San Francisco

in 1915 we will have the pleasure of a longer visit from this distinguished physician and most polished gentleman.

GRADUATE MEDICAL WORK.

Stanford University Medical School announces a series of medical courses for the summer months, from July 6th to August 16th, which should be attractive to those desiring to take a little post-graduate study. Most of the classes are limited in number and if any are interested they should address Dr. W. W. Boardman, Lane Hospital, San Francisco, at an early date.

DIRECTOR CHOSEN FOR HOOPER FOUNDATION.

The Medical Department of the University of California announces that Dr. George H. Whipple has been appointed Director of the George Williams Hooper Institute of Medical Research. Dr. Whipple is at present Associate Professor of Pathology in the Johns Hopkins Medical School, where he has been closely associated with the master-pathologist, William H. Welch, and where he has, for some years, been the active head of the department. His recent work upon the isolated intestinal loop in the explanation of the symptoms of intestinal obstruction has given a fresh impetus to the investigation of this subject.

The assumption of his duties by Dr. Whipple will be, to the Medical Department of the University of California, one step nearer the ideal toward which it is so conscientiously striving.

A. M. A. CHEMICAL LABORATORY REPORTS.

The report for the last year has just been issued and shows what a remarkably valuable work the Association is doing through its chemical laboratory. Every encouragement should be given to those who are doing this work and its value should be more widely known. Copies of the report may be had by addressing the Association, 535 North Dearborn St., Chicago; the price is twenty-five cents.

WORTHY OF PATRONAGE.

If firms in distant sections of the country advertise goods in the Journal which our readers need and which cannot be purchased at home, it is good business policy to buy from these advertisers. The fact that we admit these advertisers to our columns is proof they have been investigated and are believed to be worthy of your patronage.

RECIPROCATE.

California welcomes the people who spend their money in this State. Our Eastern advertisers spend their money here. It is a duty we owe them to reciprocate by buying from them, instead of non-advertisers.

WE STAND BEHIND YOU.

The firm that does not advertise its goods to you does not feel under obligation to sell you what you order. Any substitute will do as well; because he is not on record in print, as the advertiser it, to sell you the thing that was advertised. It pays to buy the advertised article. You always have a recourse, if wrong goods are shipped you.

CLEANING OUT FRAUDS.

When this Journal started in 1902 and announced that it was going to fight fraudulent and patent medicine advertising, everybody laughed and some swore. Three years later the A. M. A. started the

Council on Pharmacy and Chemistry and the cleaning out process became much easier. Many journals and manufacturers opposed the work of the Council, for quack medicine advertisers were good pay. In view of the fact that Wm. Wood & Co., of New York, were bitterly opposed to this policy, and in view of the fact that we started the whole thing, it is indeed pleasant to quote the following portion of a circular letter sent out by them and relating to one of their publications, The American Journal of Obstetrics. It is to be hoped that some day they will apply the same rule to The Medical Record:

Dear Doctor:

I desire to call your attention to the change in the advertising pages of The American Journal of Obstetrics. In response to criticisms by individuals and to formal action by several of the societies, whose transactions are published in the Journal, it was decided about a year ago to conform to the standards of the Council of Pharmacy of the American Medical Association. Owing to the existence of current contracts, many advertisements could not be eliminated at once, but as you will see by examining the current number of the Journal, the process is now complete. This change in policy removes an objection sometimes urged by authors who contemplated a publication of articles in The American Journal of Obstetrics.

GUARANTIES AND SERIAL NUMBERS TO END MAY 1, 1915.

The Department of Agriculture is sending individual official notices to over 58,000 manufacturers that on May 1, 1915, their guaranties filed under the food and drugs regulations will be stricken from the files and that thereafter the serial numbers assigned to such guaranties must not be used on the label or package of any food or drug. This action is in accordance with the regulations adopted on May 5, 1914, by the Secretaries of the Treasury, Agriculture and Commerce, which abolish the use of the guaranty legend and serial number on foods and drugs. The ground for this action was that the legend "Guaranteed by (name of guarantor) under the Food and Drugs Act, June 30, 1906," was understood by many consumers to mean that the Federal Government had passed upon and certified the excellence of the article so labeled, whereas the legend and serial number were merely a guaranty on the part of the manufacturer to his dealer that the manufacturer would assume full legal responsibility for his goods.

In the meantime from the records it appears that 58,816 manufacturers have filed guaranties and obtained serial numbers, the last number issued being 58,816.

The notice advises manufacturers that after May 1, 1915, guaranties should not appear on the label or package, but should be incorporated in or attached to the bill of sale, invoice, bill of lading, or other schedule giving the names and quantities of the articles. The guaranty may be printed or stamped on the invoice, and if it is signed in accordance with the new regulations and refers specifically to the goods listed in the invoice or document it covers, it need not contain a detailed description or schedule of the articles.

Manufacturers who are asking permission to file guaranties and obtain serial numbers are being advised that they should attach their guaranty to their invoices and not seek to use the legend or serial number on their labels, as the guaranty and serial number will be withdrawn within a year.

IMPORTANT REQUEST.

My Dear Doctor:—

The Bureau for the Protection of Medical Research of the American Medical Association is

desirous of obviating as completely as possible any cause for complaint against animal experimentation, as well as any criticism of new methods in medical practice. Much of the "evidence" cited by hostile agitators is taken from articles in journals devoted to the medical sciences.

Instances are frequently cited in which it is claimed that, as there is no mention of anesthetics, animals have been experimented on without anesthesia. Well-known methods of medical diagnosis are described as experiments, because authors have been careless in their descriptions.

Will you not aid the efforts of the Council by a very careful examination of articles submitted to you for publication, with especial reference to the use of words or expressions likely to cause misapprehension regarding the experience of the animals used for research? And in every instance in which anesthesia is a condition in the investigation, will you not point out to authors the importance of making this fact prominent? In clinical articles, which discuss new or unusual methods of diagnosis and treatment, it is important to make clear that these methods are undertaken with the consent of the patient or his relatives. This is especially important in connection with children. We hope that by the cooperation of all who are interested in the promotion of medical science, the development of a public opinion hostile to medical research may be checked, and that there may be, instead, a growth of popular understanding of the aims, the methods and the significance of the results of animal experimentation and their practical application in the relief of suffering in man.

Thanking you for any assistance in securing these results, I am,

Very truly yours,

WALTER B. CANNON,
Chairman, Bureau for the Protection of
Medical Research.

NEW MEMBERS.

Thompson, Jas. Malcolm, Los Molinas.
Tobin, Peter Arthur, Fresno.
Pratt, Jean Paul, San Francisco.
Lucas, Wm. Palmer, San Francisco.
Henry, J. W., San Francisco.
Bryant, F. J., Soledad, Cal.
Forbes, Henry Stone, Oakland.
Cress, W. W., Sacramento, Cal.
Wilson, Gustavus, Sacramento, Cal.
Brown, R. W., Santa Maria, Cal.
Heinzmann, W. H., San Francisco.
Clark, M. F., San Francisco.
Bennett, I. E., San Francisco.
Tyler, Leatha Ruth, San Francisco.
Girard, Frank Robert, San Francisco.
Shiels, G. Franklin, San Francisco.
Morse, Arthur Henry, San Francisco.
Thomas, Benj., Palo Alto.
Lowell, F. S., Wheatland, Cal.
Davis, W. W., Anaheim, Cal.
Snyder, J. R., Sacramento, Cal.
Meredith, Jesse T., Cedarville, Cal.
Burton, Frank Albert, San Diego.
Sweet, C. D., Fresno, Cal.
Burton, F. A., San Diego.

DEATHS.

Karsner, J. H. M., Oroville.
Gates, Howard B. (Died in Rome, formerly of Los Angeles.)
Whitney, Jas. D., San Jose.
Carlson, Chas. H., Yreka. (Died in San Francisco.)
Reinhardt, George Frederick, Berkeley, Cal.
Reed, Wm. E., Los Angeles.
Hopkins, H. St. G. L., Fresno.
Bickford, Amos W., Pasadena.
Webb, Benj. Oliver, Los Angeles.

California State Journal of Medicine.

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VOL. XII AUGUST, 1914. No. 8

EDITORIAL NOTES

TUBERCULOSIS NUMBER.

The special "tuberculosis day" at the last meeting of the State Society, in Santa Barbara, was a very attractive feature of the session and drew an excellent attendance. Some of the papers evoked considerable discussion and all of them were well worth listening to and thinking about. It is, therefore, with much pleasure that they are here gathered together and presented in one number of the JOURNAL where they may be the more easily referred to in the future. It is to be hoped that the enthusiasm developed by this "tuberculosis day" will not be allowed to die out but that other meetings will see other such days. Next year there will be many medical meetings and doings in San Francisco and if those who are principally interested in this subject will take the matter in hand early enough, they ought to be able to arrange for some big meeting either about the time the American Medical Association meets there, or later on when some of the meetings of the Association for the Advancement of Science are to be held. But no time should be lost in starting the movement, if it is to be a big success.

A HELPING HAND.

Quite a number of new advertisers have come along and taken space in your JOURNAL, recently, and are to that extent helping you. Are you helping them? Have you looked through the advertising pages and noted the new advertisements? Occasionally an advertisement appears as a test of whether interest is taken in the JOURNAL advertisers or not. A few months ago we carried a page advertisement of a Chicago house offering Oliver typewriters at a very low price. Did any-

one interested in getting a typewriter take the trouble to write to this advertiser? We do not know, but two or three of this make of machine have been noticed in physicians' offices lately. Will you not try to learn that everything we advertise in the JOURNAL is guaranteed to be as represented? And that, in almost every case, you will save money by patronizing those who advertise in your JOURNAL? Furthermore, practically everything claiming medicinal properties has been scrutinized by the Council on Pharmacy and Chemistry before it is accepted by us.

Please look through the advertising pages of each issue and take as much interest in your advertisers as they take in your JOURNAL.

Recently we have begun advertisements of Mellin's Food and Uncle Sam Breakfast Food, and of Mr. Platt, who is trying to build up a business in clean medicinal articles in the state; the Oaks and the Ward Sanitariums are also new advertisers and also the manufacturer of a very good glass hypodermic—and everyone of us is interested more or less in these things. If they were not good and reliable, we would not publish the advertisements. Battle Creek, too, is a large institution and you ought to know something about it; it is a non-profit paying institution and you never can tell when you may want to know of and use it. Mead Johnson has joined the advertising family; have you any idea what he offers? Look it up. Keep in touch with what is going on and with what new things are offered for your use; do this by looking through the advertisements in your own JOURNAL and by letting the advertisers know that you take some little interest in them. There is nothing undignified in this course; they are all clean and reliable and most of them can help you in some way; some of them will actually save you money, if you will take the trouble to talk over prospective purchases with them. Certainly, if you want to have a strong JOURNAL and a strong Society, one of your duties is to help in every little way that you can; this is one way in which you can help, and help a whole lot, without going to any expense or trouble to do it. Read your own advertisements and deal with your own advertisers.

RED CROSS SEALS OR STAMPS.

The National Association for the Study and Prevention of Tuberculosis sends out the following information in regard to the steady increase in the sale of red cross stamps. It is encouraging not alone because of the increasing amount of money raised but more particularly because of the fact that it shows a growing interest in the work being done, and no amount of money will do much good without the thoughtful co-operation of the people generally.

More than 44,000,000 Red Cross Christmas Seals were sold last December, according to a report issued to-day by The National Association for the Study and Prevention of Tuberculosis, and the American Red Cross. In this way \$440,000 is netted for anti-tuberculosis work in various parts of the United States.

The sale in 1913 is a gain of 4,000,000 seals over 1912, or 10 per cent. It is hoped that

this year the 50,000,000 mark will be reached. The seal design for 1914 has been selected and orders for the printing of 100,000,000 seals have been placed. Plans for the organization of a larger sale this year than ever before have been perfected.

New York State led the country last year with a sale of over 10,500,000 seals or one for each man, woman and child in the State. Of this number, more than 6,825,000 were sold outside of New York City. Ohio came next with a sale of 2,800,000, Wisconsin third with 2,700,000, and Illinois fourth with 2,500,000. Hawaii sold the most seals per capita, the total sale being somewhat over two for each inhabitant. Rhode Island came second with a sale of two per person.

Beginning with a sale of 13,500,000 in 1908, in six seasons the revenue which these little holiday seals have brought to the anti-tuberculosis campaign has more than tripled, an aggregate for the period of over \$1,800,000 or 180,000,000 seals.

TUBERCULOSIS.

No more interesting session of the recent meeting in Santa Barbara both in point of attendance and in importance, took place than that prepared by the California Association for the Study and Prevention of Tuberculosis. The papers and the discussions thereon gave evidence that the profession is awakening to the fact that tuberculosis, far from being a solved problem, is one of the greatest, if not the greatest question at present confronting it. It is to the discredit of scientific medicine that the great sociologic and economic questions involved have been of late left largely for their solution to the laity. Not only is this true, but the profession as a body has been inattentive to the problems of early recognition and scientific treatment of the disease. The charge can be brought more directly home when one sees the indifference manifested by the medical schools in the teaching of the subject. One does not have to go far to get a practical demonstration of that fact. The San Francisco Tuberculosis Clinic with a large daily clinical material is almost entirely neglected for teaching purposes, although this material belongs to and is at the disposal of the medical schools; is, in fact, attended by clinicians appointed by these schools. It is not surprising that the profession at large fails to appreciate the importance of the subject when its ranks are being annually supplemented by men whose medical education is being neglected to a large extent in this respect.

It was therefore a matter of great satisfaction to those in charge of the session to see the awakened interest manifested at this meeting. A number of the papers appear in this issue of the JOURNAL. Of the many excellent features brought out probably the most significant was the emphasis on the importance of and the great incidence of tuberculosis in children, and the fact that the disease shows itself primarily as a lung root infection in the bronchial and tracheo-bronchial glands. The statistics of Escherich and others show that 90% of town children are infected with tuberculosis by the time they have reached ten years of age, the vast majority of these having their foci in the thoracic glands. Hamburger in Vienna among 86

cases of localized tuberculosis found the primary lesion in the bronchial glands in 85. The practical lesson to be drawn from this is a two-fold one. Tuberculosis in adults is seldom a primary lesion, and we must depart from our preconceived idea of an incipient tuberculous infection in adults and recognize it for what it usually is, namely, a super-infection or an exacerbation of a pre-existing latent lesion acquired during childhood. The other lesson is the necessity of recognizing and properly treating these patients at a period when the disease is first demonstrable. If one compares the modern diagnosis and treatment of tuberculosis and syphilis, the thoroughness relatively with which the latter disease is handled is brought strongly forth. A Wassermann reaction shows no more clearly the presence of the spirochete of Schaudinn, than does a positive tuberculin test in a child show the presence of a tuberculosis infection. Why the one should demand a thorough course of anti-syphilitic treatment, and the other be relegated to a careless regime of what is popularly called hygienic treatment, which is the usual course, is one of the puzzling phenomena which thoughtful students of tuberculosis fail to understand. The time to treat tuberculosis is when it first becomes demonstrable. Thanks to improved methods in examination, and particularly to improved technic in Roentgenology the recognition of tuberculosis in children has been placed on a much more scientific plane. This fact places the responsibility much more securely on the profession. If tuberculosis is to be eradicated, it must be by the recognition and eradication of the disease before it becomes a focus of dissemination. While the masses and the legislatures grapple with the problem of prevention from the standpoint of housing, isolation, factory inspection, etc., scientific medicine, if it fulfils its duty, must recognize the disease and eradicate it before it becomes a danger to others. This is the most important problem in the prevention of tuberculosis which to-day confronts the physician individually.

ITEMS ABOUT MEDICAL SCHOOLS.

Two items referring to medical schools, Johns Hopkins and the Medical Department of Stanford, appear elsewhere in this number of the JOURNAL. We are particularly interested in the letter of Dr. Vaughan for it refers to Stanford. The JOURNAL has at various times commented on the existence of two high-class medical departments of universities in our state and has deplored, in a purely impersonal way, the apparent waste which this duplication would entail. The possible amalgamation of the two schools has been the subject of many conferences and it appears that such a consolidation is impossible, at least at the present time. Such being the case, we can only agree with Dr. Vaughan in congratulating Stanford that it has such an excellent department and wish to both of these medical departments the very best success in carrying out their work. Perhaps, after all, it may be better to have two sturdy, healthy, well-grown medical departments than one; who can say? It is hard work, to be a prophet.

THE ATLANTIC CITY SESSION OF THE A. M. A.

The last annual session of the A. M. A., at Atlantic City, was a very successful one in every way. The sections all had good programs and the attendance at the sections, as well as the general registration (about 4,000), was very good indeed. Except in one or two instances, there was little acrimonious discussion or fighting about anything, in the House of Delegates, and a great deal of business was done promptly and well and with what should prove to be most excellent results. The Trustees sounded a warning in regard to expenditures and the necessity for curtailing some of the too rapidly growing activities of the Association, and this was well accepted by the House and commended. An application was made to the Trustees to have the Association, through the Board of Trustees, be the custodian of and hold in trust, patents on surgical instruments, appliances, and the like. The basic idea is simple; it is not considered ethical for a physician to patent and derive a revenue from such articles as are intended for the general good of the people; and yet, if they are not patented, any unscrupulous person can make them improperly and thus do great harm to the user and to the patient. This was referred to the Judicial Council and they made the following recommendation to the House of Delegates, which was adopted:

Resolved, That the Board of Trustees of the American Medical Association shall be permitted to accept, at their discretion, patents for medical and surgical instruments and appliances and to keep these patents, as trustees, for the benefit of the profession and the public; provided, that neither the American Medical Association nor the patentee shall receive remuneration from these patents.

The Committee to Consider the Mode of Commemoration of the Completion of the Panama Canal, made the final report and recommendation embodied in the following resolution, which was carried:

Resolved, That the House of Delegates set aside a day during the next Annual Session of the American Medical Association to be designated as "Honor Day" in recognition of the services of the men living or dead whose contributions to sanitary science and preventive medicine have made possible the construction of the Canal, and on that day a general session of the American Medical Association be held to which the public shall be invited.

OFFICERS ELECTED.

The following officers were elected by the House of Delegates of the A. M. A.:

President-elect, William L. Rodman, Philadelphia; First Vice-President, D. S. Fairchild, Des Moines, Iowa; Second Vice-President, Wisner R. Townsend, New York; Third Vice-President, Alice Hamilton, Chicago; Fourth Vice-President, William Edgar Darnall, Atlantic City, N. J.; Secretary, Alexander R. Craig, Chicago; Trustees, Philip Marvel, At-

lantic City, N. J.; Philip Mills Jones, San Francisco; W. T. Sarles, Sparta, Wis.; Chairman of the Committee on Transportation and Place of Session, J. R. Pennington, Chicago.

The President then nominated and the House confirmed the following: Member of the Judicial Council, Alexander Lambert, New York; Member of the Council on Health and Public Instruction, H. M. Bracken, Minneapolis; Member of Council on Medical Education, Arthur Dean Bevan, Chicago.

After considerable discussion, and in spite of the fact that the Committee on Transportation and Place of Session recommended Chicago, San Francisco was substituted for Chicago in the report and then chosen as the place for the 1915 session, the time to be fixed by the Board of Trustees.

AMERICAN MEDICAL ASSOCIATION—SAN FRANCISCO, 1915.

Largely to aid in commemorating the fact that scientific medicine and sanitation based thereon dug the Panama Canal, the American Medical Association by its House of Delegates at the Atlantic City session in June last, voted to hold the meeting for 1915 at San Francisco. The time will probably be the third week in June, 1915. This will be the fourth time the Association has met on the Pacific Coast; in 1894 it met in San Francisco and all of the various sections held their meetings under one roof; in 1905 it met at Portland, Oregon; in 1911 it met in Los Angeles; next year it will again meet in San Francisco, after 21 years, and again all the sections will meet under one roof. The Exposition directors have kindly placed the huge auditorium at the disposal of the Association for the third week in June, and here can be housed the registration booths, the scientific and commercial exhibits and all the various sections, concentrated under one roof. The general session could be held in the same building, but there might be some disturbing noise or confusion and so it seems better, at the present time, to have this session in some down-town theatre, as is the custom. This meeting of the Association at the time of the Exposition should not be regarded as a local affair confined in its interest to San Francisco alone; it is of the greatest interest to the whole Pacific Coast and all the coast cities should take an active interest in it and in making it one of the largest attended sessions of the Association on record. There is a lot of work to be done, but we of the coast are good workers, and hospitable withal, and we must not take the least chance in letting our eastern visitors go away with any lowered impression of California hospitality. Great praise is due to our delegates to the Association, Drs. Ellis, Vecki and Hare, and especially to Dr. Hare, who got up out of a sick-bed to attend the session of the House of Delegates and made a speech for San Francisco that everybody spoke of as being most remarkably eloquent. Let us forget everything except that our guests will be with us before we know it, and prepare to make them right royally welcome to our Golden State.

BOARD OF MEDICAL EXAMINERS.

The State Board of Medical Examiners has officially disapproved of the Los Angeles College of Osteopathy and the Pacific College of Osteopathy (Los Angeles), (the only two osteopathic colleges in California), so that none of their graduates are permitted to take the examination for the unlimited or "physician and surgeon" licenses, which they demanded. Graduates of osteopathic schools may *not* take the "physician and surgeon" examinations. They may, however, apply for the "drugless practitioner" examinations provided by the Medical Practice Act. The Pacific Medical College of Los Angeles was denied any sort of recognition. It is understood that these institutions are now suing the board to compel recognition.

It is well recognized that the most important test is that which includes a very careful investigation into the sort of training (medical and pre-medical) that the applicant has had. That part of the law which makes it necessary for a college to be "approved by the board" very effectually eliminates the diploma mill evil.

DANGER!

On another page, because received too late to go in here, is an official statement of the proposed attack on all restraint of the practice of medicine. Read it carefully and try to educate all the voters you come in contact with.

96 PAGES.

Just note that this issue of the JOURNAL carries 96 pages and a lot of up-to-date material on Tuberculosis. Your advertisers help to make it possible; why not help them?

COUPONS.

One kind of coupon that it is profitable to cut off, is the corner tag on the advertisements you see in your JOURNAL. Why not cut some of them off and send them to the advertiser, thus letting him know that you are interested? And where there are no coupon-tags, why not drop a postal or a letter? You will be helping yourself.

ADDRESS OF THE PRESIDENT OF THE CALIFORNIA ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.*

By ROBERT A. PEERS, M. D., Colfax.

Gentlemen of the Medical Society of the State of California:

On behalf of our society, The California Association for the Study and Prevention of Tuberculosis, I wish to thank you for your liberality in granting us one-third of the time allotted for your state meeting for a scientific program upon the subject of tuberculosis; and also, on behalf of our Association, I extend to you a hearty invitation to partake in the discussion of the papers to be presented to you to-day.

Our Association has for several years been struggling against odds to do its share in the great battle against tuberculosis and to establish the California society in its rightful place in the vanguard of the fight. This rightful position, I am sorry to state, we have thus far been unable to attain. That this is so, we feel satisfied, is due in a large measure to the apathy of the general practitioner, the ignorance of medical subjects among the laity, the general belief in the efficacy of climate to the exclusion of other therapeutic measures which has made, in the minds of many, every California town a resort; and last, but not least, a slight leaning toward commercialism as shown by the attitude of the men especially skilled in the diagnosis and treatment of this disease. Thus it has happened that, while many states much less favorably situated, where natural advantages are considered, have large, and thriving societies for the study and prevention of tuberculosis and liberally equipped and well managed state institutions for the treatment of the tuberculous, we, in California, living in a climate that is renowned throughout the world as unsurpassed, a state into whose coffers are poured millions from the pocket-books of wealthy tourist health-seekers, have a struggling association for the study and prevention of this disease and no state institution for the treatment of the tuberculous poor.

It has been the aim of our society during the past year to try to devise means by which the condition of affairs may be bettered and by which we may be enabled to more successfully solve the tuberculosis problem that confronts our state. With this end in view it was decided to present at this meeting a scientific program, and your body, as I have said, most generously gave us one entire day for this meeting.

The tuberculosis situation presents, it seems to me, two distinct problems for solution: First, the prevention of new cases—to be brought about by education; second, the caring for those already ill. The first problem, education, must be considered from two standpoints: First, the education of the medical profession; second, the education of the laity. The education of the medical profession regarding the diagnosis and treatment of tuberculosis is a much more urgent matter than you, who

* Held jointly with the Forty-fourth Annual Meeting of the Medical Society of the State of California, Santa Barbara, April, 1914.

attend medical meetings regularly and thus come in contact with the better informed members of the profession, can appreciate. If you have any doubts on the subject you have but to search the records of any institution devoted to the treatment of this disease to realize the great need in this respect. The education of the profession can be brought about by higher standards of medical education with, at least, one specialist on tuberculosis on the staff of each medical college and a larger percentage of the time allotted by the curriculum for the study of the disease that kills one of every seven people who die in this state; the presentation of a symposium upon tuberculosis at each meeting of the State Medical Society, the authors of such papers to present them by invitation; and the holding of a tuberculosis meeting once each year by each county society, at which meeting the subject of tuberculosis will be discussed by men chosen because of their special knowledge of the subject. The education of the laity will, perhaps, be carried on by means of medical superintendents and the visiting nurses of the various local dispensaries which must be established in the state if we are to control the disease, and by the aid of popular lectures to be given by trained talkers equipped with a synopsis furnished by an editing committee in order that the misstatements of enthusiastic and zealous, but misinformed, crusaders may not hinder the work; by teaching prevention of the disease in every grammar school, high school, normal school and university, so that the people will know and demand high-class work on the part of the profession—a public that will demand a genuine examination of the chest instead of a cough medicine when seeking advice because of a cough, that will not be satisfied with a diagnosis that the blood of a hemoptysis came from the back of the throat, or that the tired feeling, slight fever, and loss of weight are due to malaria, unless the examination of the blood shows the plasmodium, but will know that such symptoms are frequently the result of the activity of the tubercle bacillus. In connection with the education of the laity I will not deal with, but barely mention insurance against tuberculosis, as this subject will be dealt with by one of the other members of the society later in the day.

The second part of this problem, the caring for those already ill, is one of great magnitude and requires the expenditure of large sums of money. The time at my disposal will permit me to but touch upon the various means of caring for tuberculous patients. I am in hopes that Dr. Howard, of the State Bureau of Tuberculosis, will go more fully into the subject. In my opinion there is urgently demanded the following equipment for the care of the indigent tuberculous:

1. Dispensaries which shall be places for diagnosis and for the disposition of cases, with proper medical supervision and aided by competent visiting nurses.
2. Sanatoria for the care of early cases of tuberculosis and such as give promise of recovery.

3. Hospitals for advanced cases.

4. Some method of treatment for patients too far advanced to admit of their reception at the sanatorium, but not so far advanced as to be hopeless or subjects for hospitals; these cases to be treated at home under supervision of the visiting nurse or in day or night camps.

In passing, I will state that while many patients who will be taken care of in day and night camps might be better taken care of in a sanatorium, such patients are to be found in such numbers, in the thousands, that it would be an economic impossibility to receive them all in a sanatorium. And again, the night camps may also be used to give meals and outdoor sleeping quarters at night for workers who have been discharged as arrested from the sanatorium and who wish to continue the sanatorium regime as far as possible while working.

This method of handling the tuberculous was presented by me a couple of years ago in a paper presented before a meeting of Health Officers held in conjunction with the League of California Municipalities, and is in substance similar to that offered by the Tuberculosis Commission one year ago. As stated above, such a plan will require a great deal of money, and it is impossible at the present time to get any legislature to appropriate sufficient money to carry it out. It has been decided, therefore, to circulate a petition and invoke what is known as the Initiative, thus getting the subject before the people on the ballot at the coming November election. The amount asked for will be one million dollars, and your assistance will be asked later to-day and also during the campaign.

I will touch very briefly upon the activities of the society during the past year, because this will be gone into in more detail by the Secretary in his report. Your President endeavored to secure the formation of more local societies during 1913-14, but abandoned this mode of attack because of the general apathy amongst the profession and the laity. Thereafter he devoted most of his time to giving addresses and the preparation of the scientific program which will be presented to-day. In all, thirteen addresses were given as follows:

Medical Societies	2
Nurses' Association (San Francisco).....	1
Summer Session (University of California)....	1
Class in Hygiene (University of California)...	1
Churches (Tuberculosis Sunday).....	3
Normal School (Chico).....	1
High School (Mountain View).....	1
Grammar School (Mayfield).....	1
Anti-Tuberculosis Association (Berkeley).....	1
Tuberculous Prisoners (San Quentin).....	1

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As a direct result of the talk to the tuberculous prisoners at San Quentin, together with two subsequent visits followed by talks with the prison physician, warden, and members of the Board of Prison Directors, the sum of three thousand (\$3,000) dollars was appropriated for the con-

struction of a tuberculosis ward for the prisoners confined in the State Prison at San Quentin.

Tuberculosis Sunday was called to the attention of the Governor, resulting in an official announcement of December seventh as Tuberculosis Sunday.

In closing I would like to make a few suggestions which I believe, if carried out, would enable our society to do more efficient work. Lack of time forbids going into details and I shall merely give an outline of the various measures I believe might, with profit, be adopted:

First, I believe it would be well to return to a closer union between the state and local societies for the study and prevention of tuberculosis, with a certain definite yearly membership fee, the proceeds of which may be divided upon a percentage basis satisfactory to the state society and the local associations.

Second, the society should issue bulletins and co-operate with the State Bureau of Tuberculosis and the State Board of Health.

Third, there should be a full time executive secretary under salary who should be in constant touch with and work in harmony with the President; until the funds of the society will warrant, such secretary may be merely stenographer to the President. This would be no more expensive than the present system, which, because of the geographical location of the homes of the President and the secretary, has gone far toward defeating the efforts of two zealous workers to make a marked success of the work of the Association.

Fourth, I most earnestly urge the use of the funds of the society for the purpose of getting the Tuberculosis Initiative petition on the ballot and securing its adoption by the people.

Finally, I would urge the co-operation with the other southwestern states in the securing of a Federal Hospital to accommodate the tuberculous poor who are sent to the west and the southwest in hope of benefit from climatic change and who have heretofore become a charge upon the bounty of the several communities upon which they have been inflicted.

In conclusion, I wish to thank those responsible for the great honor conferred upon me in electing me President of the California Association for the Study and Prevention of Tuberculosis, an honor, I fear, much more appreciated by me than deserved.

THE CALIFORNIA ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

SECRETARY'S REPORT FOR 1913-1914.

By GEORGE E. TUCKER, M. D., Riverside.

During the year 1913-14 the work of the California Association for the Study and Prevention of Tuberculosis as carried on by the Secretary has consisted largely of a duplication of the work of previous years.

Inasmuch as the Secretary had been instructed at the last annual meeting to exert his best efforts

to bring about the formation of new societies in the state, during visits made by him to various County Medical Societies, an effort was made to interest the officers and members of these societies in the anti-tuberculosis society movement. Definite promises to organize local units were given and followed by correspondence at Ukiah, Roseville, Fresno, Modesto, Pomona and San Bernardino and Santa Cruz. Lectures were delivered at Ukiah, Roseville and Modesto, and in each instance the enthusiastic organization workers explained that it did not seem advisable to try to form a unit in their locality when definitely asked to fix a date to bring about the perfection of an organization.

Having failed to interest the health officers in various sections of the state in this work, I felt warranted in taking the matter up with the various County Medical Societies through their secretaries, and, accordingly, addressed a communication to the secretaries of the counties where no such organization existed. From Shasta County the reply stated that there would not be sufficient interest to support such a unit because there was so little tuberculosis in that section. From Butte information was forwarded that such an organization did not meet with the favor of the county doctors and that there was very little tuberculosis in that part of the state. From Watsonville further information was requested and after having been submitted there was no reply.

My efforts to interest Secretaries and members of Medical Societies met with the same result as was experienced last year when an attempt was made to form new organizations through enlisting the co-operation of health officers. In each instance the Secretary called the attention of the correspondent to the work that the State Association has been trying to do and that there should be one or more local societies in every county of the state, that the President or Secretary would visit their locality and bring about the formation of such an organization if arrangements could be made for a public meeting and if in their opinion enough interest could be aroused to carry on the work after such an organization had been perfected.

The bi-monthly National Press Notices have been mailed regularly to about five hundred newspapers in the state but it has been impossible to determine the extent to which these notices have been given publicity since the State Association does not subscribe to a clipping bureau.

Since December 1913 correspondence has been carried on with the Governor in regard to the appointment of a committee from the State of California to assist the Southwestern Conference on Tuberculosis in the passage of a bill providing for Federal Hospitals for the care of the tubercular sick in the Southwestern States. Governor Colquitt of Texas has requested that the Governor of the States of Arizona, California, Colorado, Kansas, Nevada, New Mexico, Oklahoma, Texas, Utah, each appoint a committee of eleven members consisting of two Senators, two Congressmen,

two business men, two doctors, two ladies and the Governor. Eight Governors had already complied with this request, but Governor Johnson had not seen fit to make such appointments. A number of letters were exchanged through the months of January, February and March and on March 20th notification was received from the executive office at Sacramento that the following committee was appointed:

Hon. George C. Perkins, Hon. Jno. D. Works, Hon. Wm. D. Stephens, Hon. Jos. R. Knowland, Dr. George H. Kress, Dr. Philip King Brown, Mrs. Samuel Brust and Miss Katherine C. Felton, making eight members, when eleven had been requested. The two vacancies have not been filled and this Association is authorized to complete the appointment of this committee.

The Red Cross Seals campaign was carried on as in previous years.

A new supply of circulars of information regarding the methods of preventing the spread of tuberculosis were ordered printed, repeated requests for these leaflets having been received throughout the year.

Of the five bills recommended by the Tuberculosis Commission appointed by the State Board of Health and passed by the legislature, but one was signed by the Governor. Your Secretary worked faithfully during the entire session of the legislature for the passage of these measures, participating in all of the hearings before the various committees and lobbying for votes on the floor of both houses. The bill which became a law provided for the establishment and maintenance of a department of tuberculosis under the direction of the State Board of Health. The Governor refused to sign other measures because of difficulty of financing the operations of the provisions of the bills.

Riverside, Cal., April 25, 1914.

Dr. Philip Mills Jones,
San Francisco, Calif.

Dear Doctor:—Enclosed please find copy of my annual report as Secretary of the California Association for the Study and Prevention of Tuberculosis.

The papers presented at the meeting were discussed by the following men:

Dr. Edw. von Adelung, of Oakland; Dr. John C. King, of Banning; Dr. Philip King Brown, of San Francisco; Dr. Voorsanger, San Francisco; Dr. Jackson Temple, Santa Rosa; Dr. Boardman, San Francisco; Dr. C. C. Browning, Los Angeles; Dr. G. H. Kress, Los Angeles; Dr. F. M. Pottenger, Dr. Howard, Sacramento; Dr. G. G. Moseley, Redlands; Dr. Dunn, San Diego; Dr. Gillihan, Oakland; Dr. Strietmann, Oakland; Dr. Ely, San Francisco; Dr. G. H. Evans, of San Francisco; Dr. Carling, of Los Angeles; Dr. Watkins, of San Francisco; Dr. Page, Berkeley, Dr. Martin.

Yours sincerely,

GEORGE E. TUCKER,

Secretary.

THE EARLIEST MANIFESTATIONS OF TUBERCULOSIS AND TREATMENT.*

By GEO. E. EBRIGHT, M. D., Instructor in Medicine, University of California, San Francisco.

The diagnosis of early pulmonary tuberculosis in this discussion may be defined as the recognition of a focus of incipient tubercular inflammation, and also the recognition of the first advances of a recrudescence of an arrested or latent lesion. It is axiomatic in tuberculosis that the greater the number of early diagnoses, the greater will be the number of recoveries; conversely, it may or may not be an hyperbole to state that the presence of advanced tuberculosis presupposes failure of early diagnosis, allowing of course for the virulence of the infection and the fighting qualities of the patient's organism. However, it does not require the force of exaggeration to emphasize the all too patent fact that in a most pitifully deplorable number of instances lives are lost because the physician has not made himself familiar with the easily elicited signs of beginning tubercular infection. Advanced tuberculosis may also mean neglect upon the part of the medical adviser to enforce a rigid regime of treatment at first. Misdirected pity too often compromises judgment.

Incipient tuberculosis does not manifest itself by any one pathognomic sign as does the advanced disease by the presence of Koch's bacillus in the sputum, but its recognition depends rather on the scrutiny of a complex picture the parts of which are with painstaking care elaborated from the history of the patient's family and his associates, the story of his former life, the various subjective symptoms of which he may be aware and the physical changes produced by his malady. In a word, the secret of early diagnosis depends upon adherence to a systematic scheme of case-taking and then a consideration of the patient's rational symptoms and the physical signs.

A word about tuberculosis in children. The work of Von Pirquet laid the foundation for the now generally accepted dictum that by the age of sixteen years practically all children have had tuberculosis, so the disease of the adult is very likely to be a lighting up of a previous infection which an attenuated state of the individual's resistance or a reinfection by repeated contact with other tubercular individuals and the onslaught of overwhelming numbers of bacilli has brought about. Such lowering of resistance frequently follows measles and whooping cough in children or typhoid, over-fatigue, etc., in the adult. The consideration of tuberculosis in children means particularly a search for glandular tuberculosis, especially swelling of the glands at the base of the lung and in the mesentery.

Peribronchial adenitis often causes chronic dyspnea; percussion may elicit dullness in the region of the sternum; the radiogram shows a mediastinal shadow and the tuberculin reaction the nature of the lesion. In children as well as in adults it cannot be too greatly emphasized that every patient

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showing loss of vitality, diminished nourishment, apparent anemia and unwarranted fatigue should be regarded as tubercular until the disease has been carefully excluded. Children in California at least, dying from marasmus, will be found upon autopsy to be in a very large percentage the subjects of tuberculosis.

The history of the adult patient therefore requires a careful search for periods in which he has suffered from diseases lasting some time, particularly stages of low nourishment, prolonged convalescence from infectious diseases (as whooping cough and measles), or pneumonia, or typhoid, an indefinite history of malaria, the existence of that condition referred to in young people as growing too fast, particularly if associated with febriculae or cough.

Inherited tendencies are to be demonstrated by examination into the family history for at least two or possibly three generations. The presence of tuberculosis in the immediate family is not only of importance as an indication of low fighting qualities, but more important is it that repeated contact with active tuberculosis in the household speaks strongly of an acquired tuberculosis. Children subjected to such an atmosphere can hardly escape the infection. The important subject of carriers is suggested in this connection. It is being more and more recognized that tubercular patients while harboring an active infection may develop such a high degree of resistance that the disease makes no advancement for long periods of years. Such a person becomes an especial source of danger to his associates going about as he does with a chronic cough and a continual expulsion of tubercle bacilli. For example, a young man of about twenty-five, after an injury to his chest developed pulmonary tuberculosis, fatal in a few months. He lived in a small, poorly ventilated house with his mother, a woman of about fifty-five, who from her early life had had a chronic cough, undoubtedly chronic tuberculosis, from which circumstance it is easy to understand how the son with a suddenly lowered resistance developed his trouble. This case further demonstrated the point that persons with a latent or low-grade infection may be overwhelmed by exposure to those with more active disease, as the woman in this case while taking care of her son developed a very lively exacerbation of her trouble and died within the year. Carriers are not only a menace to members of their own family but also to outsiders with whom they may be in more or less continual contact, as, for instance, in places of work, particularly if these be unhygienic.

Among the symptoms which occur early are to be noted lung pains, or merely a feeling of the presence of the lungs, or a sensation of constriction of the chest. Many patients complain simply of being tired. Questioning reveals a loss of weight which possibly had not been noticed; the appetite may or may not be impaired, the illness of the patient is very frequently suggested in that he appears anemic, but an examination of the blood fails to reveal its impoverishment. The pulse rate is likely to be fast even when the

patient has no fever, and in the presence of fever the increase of pulse rate is very often found to be more than the usual pulse temperature ratio of eight beats per minute increase for each degree of fever. It has been noticed that in the first and second stages of tuberculosis the heart is found to be small in size. Whether this is the result, as hardly seems probable, of the influence of the disease, or whether on the other hand a small heart predisposes to tuberculosis is a question. Observation of the body temperature is an extremely important matter. The temperature should be measured every two hours for a period of at least four or five days. In most cases it is necessary to confine a patient to bed during this time. The presence of a small amount of fever is thereby easily detected, and also of much importance is a sub-normal morning temperature of 97° or less. It is clearly not sufficient to rely upon a single estimation of the temperature, as it may easily happen that at any one time the body temperature is at normal point. Ordinarily mouth temperatures are sufficiently accurate, but it is necessary nevertheless that the patient be carefully instructed in the manner of using the clinical thermometer. Chills, except in acute pneumonic tuberculosis or miliary tuberculosis, seldom occur.

The physical examination of a patient should be made in a warm room and the patient should be at ease, not only in body, but the excitement and nervousness to be expected on the part of a patient at the time of such an examination should be obviated as much as possible. For instance, the pulse rate at the first examination if found to be fast may be entirely due to nervous influences, but the exercise of tact on the part of the examiner will have brought about during the conversation incident to eliciting the patient's history a state of mind in which the patient feels as much at ease as may be. Preferably the patient is seated upon a stool facing the examiner, for in the recumbent position allowance must be made for the pushing forward of the clavicles; the examination of the back is also much more readily made with the patient upright.

Dilated pupils, a mark of toxicity, speak for an unfavorable prognosis, especially in children. It has been claimed that the pupil on the affected side may be dilated, but this is an unreliable sign. However, pressure of the mediastinal glands may cause unequal pupils. Incidentally, tracheo-bronchial adenopathy sometimes is the origin of violent paroxysmal cough or pain in the tip of the shoulder of the affected side. There is no distinctive type of tubercular chest, tuberculosis being found in all, although a paralytic chest speaks for inherited predisposition. There has been observed ossification of the first rib at the costo-sternal joint with shortening of the rib. Hart associates this with restricted apical movement and greater susceptibility, and believes that it may be inherited or acquired. In very many cases of early pulmonary tuberculosis asymmetry of the chest movement is noted. Pottenger has called attention to the state of spasticity of muscles—early lesions causing spasm of the overlying muscular structure

which later goes on to atrophy. There is no doubt of the value of this observation, but it requires considerable skill for its detection. Muscular atrophy occurs very early in tuberculosis and would seem to have more to do with the cause of the muscular spasm than with the presence of pleural adhesions. This flattening of the muscle can readily be seen in the regions of the clavicles or of the scapula. It is not often that important deductions may be drawn from the vocal fremitus as in the beginning its changes are not greater than may be physiologically present. Percussion dullness occurs early, but in many instances it should be possible to make a diagnosis before the occurrence of an appreciable change of percussion note. Of more importance is the retraction of apical excursion and diminished movement to be found at the bases of the lung. In estimating the pulmonary excursion at the base observations should be made upon both sides in front of the chest and both sides posteriorly. The lower border resonance being ascertained, the skin is marked at that point and the patient instructed to take a full breath, and while he holds it the new lower limit of resonance is determined. Should there be no or little excursion—less than the normal two and one-half inches posteriorly, but a deepening of the percussion tone upon deep inspiration brought about by increased air volume from the lowering of the diaphragm—pleural adhesions may be suspected.

Auscultatory alterations of the breath sounds are of immense importance. When tubercular infection begins changes occur in the walls of the smallest air passages, giving rise to breath sounds which change as the process advances. The first alteration is found to be a roughening of the inspiration, or faint breathing or interrupted breathing. This is followed, as consolidation occurs, by harsh breathing—that is, the inspiration is harsher and the expiration longer and higher pitched. This passes on to broncho-vesicular breathing; later comes bronchial breathing. If consolidation is complete, as is rarely the case in tuberculosis, but common in pneumonia, the breathing may assume a tubular character, and finally, the most pronounced change is amphoric breathing.

In a diagnosis of the very earliest tubercular changes especial attention is given to rough breathing. It has been described by Klebs as similar to the sound made by passing the fingers over the beads of a rosary. It approaches interrupted breathing, it is not high-pitched, it sounds as if soft mucous rales were nearly present. This type of breathing, or cogwheel breathing, or faint breathing, may be heard before consolidation takes place, or, in other words, before a change of percussion note occurs. It means simply a catarrhal inflammation of the bronchioles, but its importance lies in the fact that it is persistent, that it is apt to be found at one or the other of the apices of the lung, (the axillary vault should not be overlooked), that it is associated with a slight degree of fever, that a tuberculin reaction is apt to be present, and that it may be differentiated from atelectasis such as is found in the resolving

stages of an influenza pneumonia or a slow pneumonia due to diplococcus catarrhalis, syphilis of the apex, or the resolving stage of such a bronchitis as is found, for instance, in anemic girls. Taken into consideration with the history and symptoms, this rough breathing is one of the most convincing evidences of incipient tubercular inflammation. Patients, however, are not frequently seen at this time. Usually a slight degree of consolidation has taken place and there is a slight change of percussion note, together with a few dry crackles upon the end of the expiration. In order to elicit these, it is often necessary to have the patient cough at the end of deep expiration when they will be heard at the end of the succeeding deep inspiration. Rough breathing is especially important if heard during ordinary respiration. Dry crackles should be differentiated from crepitant rales. They are only few in number while crepitant rales occur in flocks. There is little difference between the sound of an individual crackle and an individual crepitation except possibly the fine crackling rales seem dryer or sharper. Ten or fifteen years ago harsh breathing and crackling rales together with an impaired percussion note were considered the earliest signs of apical tuberculosis; at the present time, however, the presence of harsh breathing and crackles indicate that the patient is no longer in the first stage. The diagnosis should be made before the appearance of rales and before there appears percussion dullness. Harsh breathing is sharp and more blowing and generally more marked in expiration; a few sibilant rales may be heard before actual consolidation of the air vesicle takes place and are of course generated in the bronchioles. Crepitant rales must not be confused with friction fremitus. However, there are sometimes sounds generated in an area of pleuritis which greatly resemble crepitations, and in many instances it is impossible to say whether the sound should be classified as a rale or frictional rub. It is satisfactory and advisable to adopt Klebs's classification and call these friction rales and the interpretation to be placed upon them is that they should put the examiner more upon his guard against pulmonary tuberculosis, as, whether they occur in the pleura or in the lung they are extremely apt to be of tubercular origin.

The recognition of a recrudescence of an arrested process rests very largely upon the patient's symptoms. Loss of weight, early slight fever and all symptoms expected in early tuberculosis put one immediately on guard and the presence of crackling rales determines the presence of renewed activity. The attending physician, as well as the patient with the knowledge that he has been tubercular, is always on the lookout for a recurrence, so that as a rule the process does not go very far before recognition.

Examination of the chest is not complete without a fluoroscopic or skiagraphic examination. The fluoroscope is chiefly useful in the assistance that it gives in determining the movement of the lungs. However, on account of the danger to the operator it is not generally to be advocated. The skiagraph shows tubercles as single light sago-like shadows,

but the X-ray examination must necessarily be interpreted in the light of rational symptoms and physical signs, and where they do not agree, the findings of the x-rays give way to the other methods of examination. Of emphatic value is the skiagraph as a record of the progress of the disease.

The tuberculin reaction is still a subject of considerable controversy. It has been the writer's practice to avoid if possible those tests which are in any way attended with risk to the patient. For that reason we feel that with experience the cutaneous reaction will serve in most cases where the diagnostic use of tuberculin is indicated. The advantage of the ophthalmic reaction may be urged as being a better indication of an active lesion than the cutaneous reaction, but it has the disadvantage of being, in rare instances fortunately, attended by an unduly severe inflammation, and also that an instillation sensitizes the eye so that a subsequent test may be misleading. It is of course recognized that the skin reaction is positive in a majority of healthy subjects. A reaction under two years of age is of positive value, as shown by Von Pirquet. The negative test in the adult speaks against tuberculosis. There are certain exceptions to this rule. The reaction is absent in measles, more or less absent in scarlet fever, is less in pregnancy, and may be absent after a pulmonary hemorrhage. One cannot accept Pottenger's explanation that the cause of the absence of tuberculin reaction after a pulmonary hemorrhage in the initial stages is due to the discharging of a tubercular focus and removal from the organism of the toxic substance which caused the formation of the specific antibodies. If that were true it should be expected that healed tuberculosis should leave no reaction whatever. It seems more probable that after a severe hemorrhage the rapidly increasing formation of new blood either attenuates the antibodies or so influences them that the reaction is not perceptible. Concerning the subcutaneous injection of tuberculin for diagnosis, it seems proper to take a stand with those who advise against its use. There is not only the danger of sensitizing the patient to tuberculin and precluding its therapeutic use, but there is always a possibility, particularly when the febrile reaction is high, 103° or 104° Fahrenheit, of a non-subsidence of the focal reaction. Before leaving the subject of tuberculin tests, the writer desires to call attention to a guinea pig test advocated by him three or four years ago in which suspected tubercular material, as for instance, pleural fluids, may be injected into a series of guinea pigs and at the end of from one to three weeks the guinea pigs treated with tuberculin in large doses. Three guinea pigs are inoculated subcutaneously and at the end of seven days one pig is given one-half of a cubic centimeter of tuberculin subcutaneously. At the end of twenty-four hours, or at the time of a presumptive tuberculin reaction, the animal is killed and autopsied and cover glass preparations from the fluid at the point of the initial inoculation made and stained in the usual fashion for tubercle bacilli which may some-

times be found. If this pig is negative the second pig is treated similarly at the end of fourteen days when in most cases the bacilli may be found with ease in the smears made at autopsy the following day. In case results from the second pig are negative the third pig is allowed to go full four weeks when tuberculin is administered to him. By this time caseation has taken place, in most cases much sooner, in the presence of which tuberculin will kill the pig at the end of twenty-four hours. In this pig it is a simple matter to recover Koch's bacillus.

Too much emphasis cannot be laid upon the conduct of the treatment of incipient pulmonary tuberculosis. It must be admitted that in many instances the disease is overcome by the patient's natural resources without medical assistance. This constitutes no argument, however, for neglecting to use every means which may prevent such patients from developing extension of the lesion and passing into the second and later stages. The ultimate object of treatment is, as has been long since recognized, the establishing of a normal state of nutrition and increased resistance to the growth of the tubercle bacillus upon the part of the patient. The most important factors tending toward a realization of this object are rest in bed until the fever is controlled and forced feeding. The therapeutic use of tuberculin is secondary to these two, although by no means to be disregarded. The danger of its use in ambulatory patients is that too much reliance is apt to be placed upon it to the detriment of sufficient care, particularly in the matter of rest, and also that reactions cannot so well be avoided or controlled with the patient on his feet. So much has already been written upon the use of tuberculin that it is unnecessary to go into the details of its administration in this paper, but it is rather desired to emphasize the rigid control of the patient's activities. It is nearly impossible outside of a sanatorium to obtain the necessary physical and mental rest; it is utterly impossible to do so if the patient is allowed to attend to his business affairs or be bothered with household responsibilities. In other words, the ideal environment for the care of any patient, whether with advanced or incipient tuberculosis, can only be found in a properly constituted sanatorium for the following reasons: The patient is cut off from the possibility of distractions arising from his business or domestic affairs; also, it is very easy to enforce the necessary rest which so often entails lying in bed for weeks or months at a time; also it becomes a simple matter to administer to his dietary requirements; also tuberculin may be used for building up his resistance under the best possible circumstances, and last but not least, the patient is taught, not only by the efforts of the physician himself, but very largely by the example of other patients in a similar state to his, those rules of conduct and living which are so essential for his progress after he leaves the hospital. There are of course patients with early tuberculosis who may recover by means of treatment administered in their homes or other places, but, nevertheless, that treatment must always aim

to reach the standards set by the sanatorium, and however that patient may desire to co-operate and with whatever means of wealth or climate the patient may have at his disposal, the physician treating a case of pulmonary tuberculosis outside of a hospital is working at a disadvantage, and the patient is not getting what is best for him. This is an important general rule with very few exceptions to it. Regarding climatic conditions, while it is claimed by some authorities that the advantages of climate have been unduly exaggerated, the writer is convinced that it is a subject which should not be disregarded, and that most patients will do better in an equable, sunny climate, to say the least, than where winds and fogs prevail, and has as a rule seen better results where the patient has been sent to the lower altitudes in the mountains than where they have remained near the seacoast.

WHY ARE BETTER RESULTS NOT BEING OBTAINED IN THE PREVENTION AND TREATMENT OF TUBERCULOSIS?*

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Tuberculosis is a preventable and curable disease. Considerable progress has been made toward both its prevention and its cure during the past quarter of a century, in spite of many obstacles. The fact that we now know more of the nature of the disease and the method of its spreading will enable us to institute other measures which will materially reduce the morbidity. In spite of the fact that the opinion of the profession is very much divided as to the value of different remedies in the treatment of the disease, we are still able by proper utilization of the methods at hand to produce an arrestment or healing in a very large percentage of cases, provided the diagnosis is made early and proper treatment is instituted at once.

The newer theories regarding early infections and their relationship to later infections pave the way for a greater reduction of both morbidity and mortality in the future. Now that we know tuberculosis to be a disease which starts in childhood, from 70 to 90 per cent. of the children being infected before they reach the fifteenth year, our problem is very different from what it formerly was when we considered infection as occurring almost wholly in adult life. We now consider that the burden of the prevention of infection rests largely upon those who have the handling of children during their early years; and, now that we know that clinical tuberculosis as it manifests itself in later life, is probably largely an extension from these early primary foci of infection which were established in childhood, we can see that the prevention of clinical tuberculosis is a question of preventing or healing early infections. The problem of the prevention of clinical tuberculosis then consists, first, in prop-

erly instructing and treating the advanced open cases so that they do not become a source of infection to others, particularly children; second, in keeping children from coming in intimate contact with those who have open tuberculosis; third, in determining during the period of childhood whether individual children are infected and if so to be sure that the disease heals before it extends and produces what we understand as clinical tuberculosis.

At first tuberculosis in children consists of a small focus usually found somewhere in the glands; the bronchial and peribronchial being involved most often and the cervical and others less frequently. From these foci sooner or later the disease spreads in quite a large proportion of individuals to other parts of the body. If the disease can be recognized in this early stage before it does extend to other structures the chances of cure are very much better than they are after it has become a more advanced process.

Even what we have considered early tuberculosis in the past would now, in the light of greater knowledge, be considered late tuberculosis. It is as a rule either an extension to new tissues or a renewed activity in an old focus. Children respond readily to treatment. Their resisting power, as a rule, is good and if they are treated during the period of childhood, the results of treatment would be better, and advanced tuberculosis, as we know it, would become much less common. Even clinical tuberculosis as we know it, that is, as an infection which has extended to the lung and which is producing symptoms of activity, will yield to treatment in a very large per cent. of cases. Such infections, provided the patient is put under proper regime early, and continued under such a regime long enough, will become quiescent and the patient will lose all clinical symptoms in a percentage ranging from sixty to seventy or even ninety; but, after the disease has passed on and become moderately advanced, the chances of procuring an arrestment have already decreased to from fifty to seventy per cent. and when it has passed on to the far advanced stage (leaving out those who are utterly hopeless) the chances are reduced again to from ten to forty per cent. This being true, why is tuberculosis not treated during the favorable stage?

In answer to the above question many conditions must be taken into consideration. All blame cannot be laid upon the physician. The patient must share a very large part of it. Unfortunately, the general knowledge of tuberculosis still fails to bring a conviction that this disease is curable. There is considerable doubt in the minds of laymen and even physicians, as to the curability of this disease. This should not be. There is every evidence to point to the fact that tuberculosis will heal in a very large percentage of cases if treated properly and treated early. One reason why there is so much doubt is the fact that those men who are dealing most earnestly with the problem of tuberculosis and spending most of their energy in its treatment are dealing almost

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entirely with the far advanced cases. A physician sends a far advanced case to a specialist for treatment. The best that can be done in a very large percentage of such cases is an improvement; and this often only temporary. More often the patient goes on down to death. What is the result? Not only the physician but the patient's friends cannot fail to see that an unfortunate result was obtained; consequently they are convinced that there is no cure for tuberculosis. If those who are treating tuberculosis would take the same stand that surgeons have taken in regard to cancer and be unwilling to undertake the treatment of the patient after he has reached the so-called "hopeless stage," we might make greater headway toward the curability of this disease; but those who have had the greatest experience would not countenance such an attitude toward tuberculosis because in many of these advanced cases there is an opportunity to prolong life even for years and to bring the patient to a state of comparative usefulness. If there could be some way to spread broadcast the knowledge that early tuberculosis is curable and that it is only late tuberculosis that is incurable, we would make far more headway in its cure.

In order to treat tuberculosis successfully, it is essential that both physicians and laymen learn to recognize early symptoms. Physicians should always have these early symptoms in their minds and when patients suffering from them present themselves for examination this common disease should be ruled out before a diagnosis is made. The disease comes on insidiously, producing such slight constitutional disturbances that the patient's attention is hardly directed to the real cause of trouble until the disease is well advanced. The symptoms accompanying early tuberculosis may point to any of the important systems of the body, the circulatory, digestive, nervous or respiratory. The patient's attention may be called to a tickling in the throat, a hoarseness, a stomach disturbance, rapidity of the heart's action, or general nervous instability; and under such circumstances other organs are suspected instead of the lung where the seat of infection lies. As a result of this the patient does not consult the physician as early as he should. Where the physician is consulted early, however, and where the diagnosis is made, it requires an extreme amount of argument at times to produce sufficient impression upon the patient to make him realize that he can be suffering from so serious a disease with symptoms which are so slight; and it is not an uncommon thing for him to consult other physicians and secure from them a negative diagnosis. There is still, however, a very important cause of our failures in tuberculosis which can be corrected by physicians alone, that is a failure to make an early diagnosis when the patient presents for examination. This failure was excusable years ago, and may be partly excusable to-day, but in the near future every young man should have such a training in the diagnosis of this disease that he cannot be excused for a failure to recognize it.

The physician must bear in mind that tubercu-

losis is the most common of all serious diseases; that it destroys from one-seventh to one-tenth of our people; that it produces clinical symptoms probably in 20 to 25 per cent. of the adult population, consequently he should always be on the lookout for it.

A common but inexcusable source of failure in diagnosis is the lack of time employed in making examinations. A most careful clinical history should be taken and a thorough physical examination made in every case where the common symptoms of tuberculosis present themselves.

One word regarding the results of physical examination. The man who is not constantly making physical examinations of the chest should not put too much reliance on his findings in suspected tuberculosis. While an expert can make a diagnosis upon these slight changes, those who are less experienced are apt to overlook them and thus fail to confirm what seemed positive evidence from the clinical history. The temperature curve is extremely important in these cases. A two-hourly chart should be taken for a number of days where there is doubt. Considerable reliance can also be placed on the tuberculin test. If 100 per cent. tuberculin is used in making the skin test and the patient should react, reaching the maximum reaction within the first twenty-four or thirty-six hours, it should make us think that activity is probably present, especially if borne out by other data.

I desire to insist most strongly upon proper sputum examinations being made. In this, the physician is too often misled by the patient. The patient will say that he has no sputum but if he is given a proper receptacle and told to bring all the sputum he raises in twenty-four or forty-eight hours, even in these early cases quite an amount of mucus will often be obtainable. If treated by some of the methods of digestion and shaking, this will often show bacilli where they were not expected. The importance of taking a twenty-four hour sample of sputum or a two or three days' sample and homogenizing it lies in this fact. In these early cases the patient may be expectorating bacilli only once in twenty-four hours, yet he may be expectorating ten times; consequently, if one expectoration were taken for the examination the chances of failure would be ten to one, while if the total quantity is collected, homogenized and examined, the percentage of error will be greatly reduced. I do not want to be quoted as considering bacillus bearing sputum as commonly present in early tuberculosis, but only as saying that examination of sputum should show bacilli earlier than the diagnosis is being made today.

The X-ray is important where it can be used by experts and be interpreted in conjunction with the clinical findings. It has little value if the examination is not made by one who is expert in chest pictures.

If any physician will pay careful attention to the clinical history, make a painstaking physical examination, give a tuberculin test and carefully examine the sputum whenever mucus is raised, I

am sure that very few tuberculous patients would pass through our offices without a diagnosis being made.

When the diagnosis is made a great percentage of patients are not treated early. They are allowed to drift. They are not taught that time is a great factor. A diagnosis of early tuberculosis is often made and the patient allowed to believe that he can do something in a month or in two months or six months. He should be impressed with the fact that in many instances a matter of two or three months means a difference between cure and death. The diagnosis should be made as early as possible and intelligent treatment should be instituted at the first moment possible after the diagnosis is made.

A great deal of harm has been done by the wrong conception of the treatment of this disease. Tuberculosis is not an easy disease to treat. There has been a revulsion against the old idea of the climatic treatment of tuberculosis during recent years. This became necessary when we learned that the most important factor in the treatment of tuberculosis was an intelligent physician who understands tuberculosis and the tuberculous patient. To be sure, when proper climate can be added, it has value, but the main factor in the handling of tuberculosis is the physician who handles it. These patients are difficult to handle. While they are anxious to live there are few of them who are willing, without continual urging, to co-operate in the cure day after day, week after week, month after month and year after year. It is also extremely difficult for the physician. It requires a physician of a peculiar type of mind to be able to hold his interest and work with the same patient during all these weeks and months and years; but, success can only be had as the result of such a co-operation between patient and physician. The man who treats tuberculosis must be optimistic. He must be able to impart his optimism to his patient; he must be able to keep him constantly encouraged, helping him over the many trials and discouragements which come during his prolonged illness. He must constantly hold up before him the fact of the curability of tuberculosis and rid his mind of the fear and pessimism which is so common regarding it. While he should not tell any individual patient that he can cure him, or that he will get well, yet he should instill into him with all the force at his command that tuberculosis is a disease which is curable, in which a healing can take place, and that, by proper co-operation, he may be able to obtain this desired end.

Another way in which the general lack of appreciation of the true situation as regards the treatment of tuberculosis manifests itself is in the general attitude of physicians toward institutional treatment. It is a common thing for physicians to tell patients that they are not sick enough to go to a sanatorium. Such a statement shows a woeful lack of knowledge of the aims of such institutions. They are for the cure of tuberculosis, not for the care of the hopeless. There is never a time after the diagnosis has been

made when the patient is not sufficiently ill to go to a sanatorium. The sooner he is placed under ideal conditions the better the result.

I frequently have patients come to me with advanced tuberculosis and severe cavity formation who have been told that they are not yet sick enough to go to an institution and they have been warned by their physician that they must keep away from patients who have tuberculosis lest they become infected. Such an attitude makes the profession ridiculous when the true situation is learned and reacts upon the one who said it.

Another serious difficulty to overcome is to give the patient the right point of view as far as the length of treatment is concerned. They are often told that a few weeks will restore them to health. This statement operates in one of two ways, either in discrediting the man who tells them how long a treatment will be necessary, or, the burden is thrown back on the physician who told them that they would be well in a few months, and the patient wonders why he made such a blunder. It is much better to be frank with patients. Tell them that it is going to require time, that the disease is serious, but the quicker they place themselves under treatment and the more earnestly they co-operate the surer the result, and the shorter the time of treatment.

Another factor which is exerting a mighty force against the curability of tuberculosis is the belief which is so widespread that cure depends alone upon fresh air, good food and rest. A patient may take all of these and still die, even though he took them when the disease was curable. While these are very important factors in the cure, they are not cures for any disease. If they are the only cures for tuberculosis why should a man seek scientific advice and guidance? These are not cures; but these measures, when properly used in conjunction with all other methods by intelligent physicians who understand tuberculosis and the tuberculous patient, will bring about a healing in a very large percentage of cases. If I were a layman and were suffering from tuberculosis and would read the opinions which are so common in medical literature that fresh air, good food and rest are the only cures for tuberculosis, I am quite sure that I would not be led to consult a physician and I am equally sure that I would most probably die of the disease. If I were a layman and were told, on the other hand, that the medical profession today had arrived at such a stage in the treatment of tuberculosis that it could apply fresh air, good food and rest so efficiently and combine them with other measures so successfully in combating this disease, that it could bring about a healing in a very large percentage of cases, then I would surely consult a physician and most probably save my life.

Satisfactory progress in the prevention and cure of this disease then, will only come about through the intelligent enlightenment of the people as to the nature of tuberculosis; the time of infection; the course of the process after infection has occurred; the insidious nature of the disease when it manifests itself clinically; the desirability and neces-

sity of seeking intelligent medical advice early; an ability on the part of the physician to make a diagnosis and a willingness on the part of the patient to accept the diagnosis; and the determination of both to bring the disease under intelligent treatment at the earliest time possible after the diagnosis is made.

SOME LABORATORY AIDS IN THE DIAGNOSIS OF TUBERCULOSIS.*

By GEORGE H. EVANS, M. D., San Francisco.

Notwithstanding the rapid development of knowledge concerning the recognition of early tuberculosis during the last few years, there has not been a sufficiently large relative decrease in its mortality to justify the assumption that the profession generally and the tuberculous public are practically applying this knowledge to a sufficient degree. The principal reasons for this are first the mental attitude of the patient, and second, the failure of the average practitioner to properly appreciate the importance or the possibility of recognizing the disease until physical signs and symptoms reveal gross pathologic lesions of advanced disease.

The Mental Attitude of the Patient: It has long been known to those interested in the study of this subject that the psychological attitude of the average tuberculous sufferer affords a valuable clue in diagnosis. It is seldom that one gets for instance a clear history of cough over a period of time until careful questioning reveals the fact. This cough is frequently attributed to a clearing out of the throat, or if too pronounced to be entirely ignored, some inoffensive and perfectly normal organ such as the stomach or liver is called upon to assume the etiologic responsibility. The loss of weight is explained away in various ways, if not absolutely denied. The suspected patient proudly acclaims the absence of any tuberculous history in the family even though parents may have died as the result of long years of suffering from asthma, bronchitis and other affections and frequently with which "old age" has carried off the parents and other relatives, sometimes not long after the prime of life only emphasizes the dread on the part of these patients of the existence of this disease, which dread, I am sorry to say, the misdirection of some of our educational methods has served to intensify. While this mental attitude should be given its full value as presumptive evidence in making a diagnosis, it is a deplorable fact that it also prevents a great many from seeking competent medical advice at a time when recognition may mean cure.

The Failure of the Physician to Recognize Early Tuberculosis: The responsibility for the failure to recognize the disease in its early stages can not be entirely laid at the door of the patient. In spite of all that has been said and written upon this subject the average practitioner has not yet been thoroughly aroused to the responsibility which

properly rests upon him. The significance of persistent coughs, frequently recurring colds, loss in weight, slight fever, digestive disturbances, and other conditions which go to make up a suspicious symptomatology, are altogether too frequently lost sight of, and daily from consulting rooms issue diagnoses of bronchitis, malaria, anemia, indigestion, etc., when a painstaking physical examination and an intelligent correlation of the physical signs thus found with the symptomatology would reveal the true condition at a stage when intelligent treatment would mean reasonable prospect of a symptomatic cure. If one compares the results of treatment, both home and sanatorium, of the cases recognized early with those which do not come under treatment until destructive lesions have supervened, then the responsibility on the profession generally is nothing short of appalling.

There is another side to this picture, however, which to me has recently been very interesting, and to which I wish briefly to call your attention. It would be unreasonable to suppose that the effort on the part of the tuberculosis expert to emphasize the importance of early diagnosis has entirely fallen on barren places. This indeed is not the case. There has been much fruit from these labors, but a new danger has arisen. As misdirected efforts at the education of the public have resulted in a peculiar form of hysteria, aptly called phthisiophobia, and often fraught with cruel injustice to the tuberculosis sufferer, so have the pronouncements of the tuberculosis expert in emphasizing the necessity of early diagnosis, resulted in a mental attitude in many quarters which has placed the stigma of tuberculosis upon many whose condition did not warrant such diagnosis. This error can not be exclusively laid at the door of the general practitioner, and it is rather refreshing to be able to justly place upon the tuberculosis specialist some of the odium of faulty diagnosis that, judging from so much that has been written, has heretofore belonged exclusively to the general practitioner. The more or less routine use of the Wassermann test, the constant application of Roentgenology in diagnosis, the recognition of the fact that sputa contain other pathogenic material than tubercle bacilli, have brought to light the fact that various non-tuberculous lung conditions are frequent. I have called attention to this fact in a previous communication.¹ It is my conviction that large numbers of such cases are being wrongly diagnosed as tuberculosis daily, and that this mistake is not only mutilating the mortality records but that when they are more generally recognized, the statistics emanating from a great many of our sanatoriums will have to undergo considerable revision. I believe therefore that the necessity for more exact methods in diagnosis should be urged generally upon the profession and that more intelligent interpretation of the findings should be insisted upon.

The initial stage of tuberculosis when the disease is entirely confined to the lymphatics does not admit of definite recognition. Its existence can then only be presumed. There is a large and thoughtful portion of the profession who demand

* Read before the Annual Meeting of the California Association for the Study and Prevention of Tuberculosis, held jointly with the Forty-fourth Annual Meeting of the Medical Society of the State of California, Santa Barbara, April, 1914.

the presence of bacilli in the sputum as evidence of the disease. From the standpoint of public health this attitude is not open to criticism, for it is only in bacilli positive cases that danger from infection exists. The principal object of this paper is to urge better methods of laboratory technic in examination of sputum. A long observation has convinced me that bacilli are overlooked in great numbers of negative reports due entirely to faulty methods of technic, and the first thing I wish to impress is the fact that one should not expect to find bacilli by the usual smear method of examination in vogue in nearly all our large laboratories unless they happen to be present in very large numbers. This fact has long been recognized by many, and various procedures have been brought forward whereby the bacillary content of sputum can be more readily determined. The more important of these are (1) incubation and digestion of the sputum, (2) treating it with antiformin and (3) the method devised by Ellermann and Erlandsen of Denmark. The technic of these methods is briefly described as follows:

The first consists of placing the sputum in the incubator for from 24 to 48 hours, thus dissolving the viscid mucus and pus. Sputum thus treated becomes of a watery consistency, the bacillary content sinking to the lower layer of the fluid.

The antiformin method was introduced by Uhlenhuth in 1908. The action of the antiformin which is a mixture of sodium hydroxide and sodium hypochlorite, depends on its oxidizing properties which are so powerful that all organic matter which is treated with it except hair, wax, fat, and cellulose is brought into solution. Thus all ordinary bacteria are rapidly destroyed, the tubercle bacillus protected by its fatty envelope withstanding the activity of the oxidizing agent. Several modifications of the method have appeared, the one in use in my laboratory being the following: A mixture consisting of from 5 to 20 cc. of sputum and an equal quantity of 50% solution of antiformin is boiled. To 10 cc. of this mixture after cooling is added 1.5 cc. of a mixture consisting of 10 volumes of chloroform and 90 volumes of alcohol to hasten sedimentation. This is shaken and centrifuged. Smears are made with this sediment, stained and examined in the usual way.

About the same time Ellerman and Erlandsen brought forth their method whereby the sputum was mixed and well shaken with one-half its volume of 0.6% sodium carbonate solution and placed in the incubator for 24 hours. It was then decanted, centrifuged, and again decanted. To the residue 2 to 4 parts of 0.25% caustic soda is added. This is heated to the boiling point, centrifuged, and the sediment examined in the usual manner.

More than two years ago in order to determine the relative value of these methods, my bacteriologist, Miss Schwarz, submitted 100 specimens of sputum as they were sent to the laboratory to the above-mentioned procedures. They were all from cases of suspected tuberculosis and in each case the sputum was gathered for 24 hours. The

results are best observed in the accompanying chart:

Number	Ordinary Smear	Incubation	Antiformin	Ellermann Erlandsen
46%	—	—	—	—
23%	—	—	—	+
8%	—	—	+	+
8%	—	+	+	+
15%	+	+	+	+

In fifteen cases bacilli were present by all methods. Forty-six of them showed no bacilli throughout. Eight revealed bacilli only with the antiformin and Ellermann and Erlandsen technics. Eight were positive with all methods except in the ordinary fresh smear. Twenty-three revealed bacilli only with the Ellermann and Erlandsen technic. The chart is incomplete in that it does not indicate the comparative number of bacilli found by the various methods. The Gaffky scale of counting is used in my laboratory. In positive cases where on the fresh smear only a long search revealed a sufficient number to record as Gaffky I, the Ellermann and Erlandsen technic would show a bacillary content ranging all the way from Gaffky VI to X. Since these experiments, in all specimens brought to my laboratory where the fresh smear does not reveal bacilli, the Ellermann and Erlandsen technic has been exclusively used. While it has the disadvantage of being time-consuming, its superiority over all other proceedings has been demonstrated to my entire satisfaction.

In 1907 Much of Hamburg showed that there are tubercle bacilli, which, while retaining their virulence, have lost their acid-fast properties. These bacilli stain by Gram's method, though not by Ziehl-Neelsen. They appear in two forms, a granular rod-shaped organism, and a form showing nothing but granules. They have been found not only in sputum but also in glands and tuberculous abscesses. Numerous stains have been used, all modifications of the usual Gram stain, those most in use being the Gram-Much II, Gram-Much III, and more recently the Much-Weiss staining method.² The significance of Much's granules has given rise to considerable discussion. That tubercle bacilli can under certain conditions lose their acid-fast property is pretty generally known. Bottero³ showed that living tubercle bacilli introduced into liver parenchyma lose their acid-fast quality, become degenerated and stain only by Much's method. Conversely, the attempt to reproduce acid-fast organisms by injecting Much's bodies into guinea pigs has not been conclusively demonstrated, though it has been claimed. If the acid-fast property of the tubercle bacillus is dependent on the fatty substances of which its envelope is composed, and this has been pretty satisfactorily demonstrated by Matson's experiments,⁴ then the loss of the Ziehl-stainable substance must be assumed to be due to some fat-splitting ferment. Much's granules then, being probably degeneration forms of tubercle bacilli, are not present in early cases of tuberculosis. We have only found them where acid-fast bacilli were abundantly present.

Albumin in Sputum: The significance of albumin in the sputum as suggestive of active pulmonary disease has engaged the attention of investigators since 1909 when Roger and Levy-Valensi⁵ called attention to its presence in pulmonary tuberculosis, pneumonia, passive congestion, and edema of the lung, but not in the bronchitides. Numerous observers have since reported their work on this subject, among them Lawrason Brown in this country⁶ and Ridge and Treadgold in England.⁷ The test is made as follows: Ten cc. of the purulent portion of fresh sputum are mixed with four volumes of normal saline solution and thoroughly shaken until homogeneous. This usually takes one or two minutes. From 3 to 10 drops of a 3% acetic acid solution are then added until the mixture is just acid to litmus paper. It is then filtered through moist filter paper and the filtrate examined for albumin by boiling.

While the conclusions of these different observers vary somewhat as to the value of the test, there seems to be general agreement that the reaction is present in nearly all cases of active pulmonary tuberculosis. It has been a routine procedure in my laboratory during the last three years. It has been present in 80% of cases where tubercle bacilli were present in the sputum. This proportion is considerably less than that found by other investigators. In the 20% of negative cases it is to be remarked that they were all late and rapidly progressive cases. I have often seen no albumin reaction in such cases. Attention has been directed to the quantity of albumin. In the majority of the positive cases in this class the reaction consisted in a heavy cloud of albumin in contradistinction to the slight turbidity of those among the non-tuberculous which reacted. Fifty per cent of the closed cases of tuberculosis reacted. The large number of negative cases here is probably explained by the fact that the sputum is not usually abundant, and its content of alveolar cells is much less than in most of the open cases. Ridge and Treadgold emphasize the fact that the alveolar cells are usually present in direct proportion to the intensity of the reaction and regard it as evidence of alveolitis. This fact probably explains its presence in such non-tuberculous conditions as pneumonia, bronchiectasis, and pulmonary edema, where some destruction of lung parenchyma may reasonably be expected to be present. It was present in 50% of my non-tuberculous cases. Such a large number of reactions in this class would seem to invalidate the test until it is interpreted carefully in the light of what has been stated above. Some of these cases were bronchiectasis, some were chronic pneumococcic and influenzal infections. With careful interpretation in conjunction with other tests, the albumin reaction must be considered a distinct addition to the diagnostic methods at our command.

Cellular Content of Sputum: In 1908 Wolff-Eisner⁸ drew the attention of the profession to the marked lymphocytic content of the sputum and its significance in the early diagnosis of tuberculosis. It is surprising that this fact has been so little

utilized generally, judging from the sparse mention of it in the recent literature. This is all the more surprising because lymphocytes occur in very large numbers, not only in early but also in advanced tuberculosis. After several years of observation the writer is convinced that a high lymphocytic content of sputum is in itself strong presumptive evidence of tuberculosis, while conversely a high polynuclear content speaks against it, except in cases of mixed infection, where of course, such cases being usually advanced ones, tubercle bacilli are as a rule present in large numbers.

The identity of the cellular content of the sputum has been brought into question by Riviere⁹ who suggests that these cells are alveolar in origin. By approved staining methods I believe one will not usually have difficulty in distinguishing them. Confusion arises if one attempts to differentiate on the smear previously stained for tubercle bacilli. Separate smears should be made for this purpose and stained in the same manner as a blood smear. By this method lymphocytes can usually easily be distinguished from the lighter staining epithelial cells.

The pathologic significance of lymphocytes in the sputum is difficult to explain, but has probably to do with the relationship of the toxins of the tubercle bacillus to the emigration of lymphocytes. This phenomenon we know is not peculiar to tuberculosis, but holds in other chronic infections. It is seen in the spinal fluid in syphilis of the nervous system, and Senator¹⁰ found them in the sediment in chronic nephritis. We are all familiar with the rich lymphocytic content of pleural effusions in tuberculosis of the pleura, and have long looked upon it as of great diagnostic importance.

Quite recently Wendenburg¹¹ discussed the presence of eosinophiles in the sputum of suspected cases of tuberculosis and their significance in diagnosis. While his observations have not extended over a sufficient amount of material to be of great value, they are exceedingly interesting in that the possibility of a peculiar phagocytic function of the eosinophile for the tubercle bacillus is advanced. Wendenburg found the largest number of eosinophiles in the sputum of those cases where tubercle bacilli were present to the exclusion of other bacteria and were found only in small numbers, where the amount of sputum was small, where the physical findings were apical and running a chronic course. He concludes that a local eosinophilia may be produced by a chronic inflammatory irritation which produces a proliferation, transformation and expulsion of the capillary endothelial cells, and the endothelial cells of the small vessels of the surrounding tissue. Such an inflammatory irritation is observed in early tuberculosis in the endarteritis of the smallest lung arteries which run in the immediate neighborhood of tubercles without being in actual contact with them. This probably explains the occurrence in early cases of tuberculosis of small amounts of purulent bronchiolitic sputum without infection incitors. It is in such sputa that Wen-

denburg has found eosinophiles, often in large numbers.

Serological tests as aids to the diagnosis of tuberculosis have not as yet proven of any practical value for the recognition of active disease. The fact that the majority of adults probably have latent lesions has decidedly limited the value of the procedures, as is the case with the various tuberculin tests. Today the profession is eagerly looking forward to the time when some means will be discovered by which tuberculous activity can be recognized with certainty at a sufficiently early stage.

Jessen¹² of Davos has recently applied Abderhalden's sero-diagnostic procedure for the detection of specific proteolytic ferments in the serum of tuberculous patients, using a bacillary antigen, extracted with ether, chloroform, and benzol. As a result of his investigations with a large clinical material he concluded that a positive reaction means the presence of tuberculous intoxication, and, more significant, that the reaction disappears if clinical healing occurs, or, if in spite of local findings, no intoxication exists. The accuracy of these findings, however, are seriously brought into question by a later communication¹³ in which he states that many people with inactive tuberculosis show a decidedly positive reaction.

A more painstaking and intelligent technic in laboratory diagnostic methods should be insisted upon by clinicians generally. A negative report for tubercle bacilli based on an ordinary smear examination should be relegated to mediocrity where it properly belongs. The responsibility for the quality of the laboratory work and the reliability of the report is distinctly up to the clinician. The cellular content of the sputum should be carefully investigated and the various findings carefully studied and correlated with the symptomatology and physical findings if we are to hope for an improvement in our methods of recognizing early tuberculosis.

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THE PROGNOSIS OF PULMONARY TUBERCULOSIS.*

By W. R. P. CLARK, M. D., Clinical Instructor in Medicine, Leland Stanford Jr. University, San Francisco.

To prognosticate the duration, course, and termination of any disease is necessarily a hazardous undertaking and pulmonary tuberculosis is no exception to the rule. There are many conditions, however, to guide us in reaching our conclusions. While it is well to look upon all patients in a favorable light, when we come face to face with grim facts day after day it sometimes robs us of our optimism. From the prognostic point of view it might be well to dwell for a moment on the class of individuals this disease selects as its victims. They are usually the unfortunates whose vitality has been lowered by inherited tendencies, by indiscretions on their own part or by the misfortune of not being able to get proper food and hygienic surroundings and the outcome depends to a large extent upon what we may be able to do to remedy the deficiency in each particular case. Unfortunately, in dispensary work, and with a great many cases in private practice the provision of proper means for care is not at present at hand.

When we have taken the history of the patient, made our physical and other examinations and finally reached a diagnosis (if there is a question as to diagnosis the prognosis is much better), now, on what are we to base our predictions?

The family history will possibly give us some light. If, for example, the patient's mother, sister and brother died of pulmonary tuberculosis and the father died young of some other disease, we know that the inherited resistance to any disease and particularly pulmonary tuberculosis is poor; on the other hand, if the father, mother, sisters and brothers are living and well we may assume that his inherited resistance is good. Between these two extremes there is a wide range of possibilities.

Next, the individual himself, his previous history and habits. The prognosis in a patient who has had numerous severe illnesses is probably worse since he is evidently more susceptible than one with a clear previous history. Lues is a notorious predisposing cause and should likewise be taken into consideration in the prognosis. Alcoholism is probably more often present in the previous history than lues and prepares a very fertile soil for the disease and proportionately lowers the resistance to it. We have all seen patients doing well, all symptoms improving, go on a spree and immediately thereafter rapidly decline.

Another characteristic to be given a good deal of weight is the temperament of the individual. To illustrate this I will cite two cases coming under observation, each in an advanced stage, marked involvement of both lungs, very rapid pulse, about the same temperatures and as nearly alike as two cases could be. "A" worked at his trade horseshoeing until the day of examination. He

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was told he had pulmonary tuberculosis, went home and to bed and died within two weeks. "B" on account of his feeble condition was cautioned not to exert himself on the way home for fear of a collapse and to go immediately to bed upon arrival there. "B" lived exactly four years and supported himself and family about two years and one-half of the time working at his trade as a shirt cutter. It is true the family history was bad in the case of "A" and fairly good in the case of "B" but we were strongly impressed by the marked difference in the mental effect on each patient.

The age of the patient. The death rate is undoubtedly greatest during the middle years of life and the prognosis, all things being equal, is rather more favorable in the very young and in those past middle life. The disease seems to run a slower course after middle life. The diagnosis to me seems somewhat harder to make in children than in adults but I have seen some cases in children with definite diagnoses do remarkably well. One patient, a boy ten years of age with a cavity diagnosed in the right apex by several physicians and confirmed by X-ray, and considered in a very critical condition in April, 1912, had gained sixteen pounds in weight and practically all symptoms except a slight cough with a little expectoration in the morning had disappeared one year later, sputum still positive. In December, 1913, boy looked perfectly well, physical examination showed very slightly impaired resonance at apices, no other signs of disease detected and sputum negative. Had gained four more pounds in weight. This patient had home treatment.

The ages at time of death of 96 patients at the San Francisco Tuberculosis Hospital were as follows:

Under 10 years.....	1
10 to 19 inclusive.....	2
20 to 29 ".....	19
30 to 39 ".....	29
40 to 49 ".....	23
50 to 59 ".....	12
Over 60 years.....	10

The figure under ten years should not be considered for we have very few children to care for.

In the female, as a rule, the advent of pregnancy renders the outcome less favorable. However, in recent years many women have been successfully carried through this condition.

The rapidity of progress of the disease, or the stage of the disease taken in connection with the date of apparent onset. The outlook is rather better with a history of slow progress than with a history of rapid progress.

We now come to the stage of the disease as a factor in prognosis. Using the classification of the National Association the prognosis follows very closely its stages but by no means always; more favorable in incipient, less so in moderately advanced and, as a rule, bad in far advanced, but there are many exceptions to this rule and for prognostic purposes the classification cannot serve definitely. We have all seen some incipient cases run a very rapid and fatal course and some far

advanced cases progress very slowly and even become arrested. One case coming under my observation in early middle life with a history of short duration, the physical examination showing a small lesion at one apex with other organs apparently normal, died from tubercular meningitis within two weeks after first being seen. On the other hand, a number of far advanced cases have lived and been comfortable for from three to six years or longer. These illustrations demonstrate a point to be considered in making rules for the admission of patients into a state sanatorium, i. e., not to be governed in the admission of patients so much by the stage of the disease as by the showing of improvement while under observation in a suitable institution for a stated period.

To illustrate some of the points mentioned above I give below a few statistics gathered from dispensary and city hospital work in San Francisco to show the class of cases handled and to give some idea of the outcome, also some statistics from other sources.

Patients occupying forty beds at the San Francisco Tuberculosis Hospital during the past few years:

Beds full at present with patients in various stages	40
Discharged improved	23
Discharged unimproved	13
Discharged no comment.....	38
Died	98

212

No claim is made for positive cures but several of the above noted as "improved" were arrested cases.

Over forty-six per cent. of the total number died. 47 died within the first month.

34 " between one and six months.
7 " " six and twelve months.
9 " " one and two years.
1 " " two and five years.

98

Quite a large proportion of the 47 died within a few days after being admitted. These figures are from one of five services and I presume the percentages are about the same with the others. At present there are about two hundred beds in the hospital.

But the San Francisco Hospital is not alone in this class of statistics, for in Reprint No. 145, Public Health Reports, Oct. 17th, 1913, Tuberculosis Sanatorium, Fort Stanton, N. M., the following ultimate results of treatment are given:

"Out of 1,924 patients whose treatment terminated more than six months ago, 951 are known to be dead, 687 of these having died at this hospital. The location and condition of 853 could not be ascertained."

An analysis of 414 patients in the Stanford Division of the Tuberculosis Clinic of the San Francisco Association for the Study and Prevention of Tuberculosis:

		Lost Sight of.			
		Incip.	Mod. Adv.	Far Adv.	
Within 1 year.....	56	76	51		
Bet. 1 and 2 yrs....	1	3	0		
Bet. 2 and 3 yrs....	1	3	1		
Bet. 3 and 4 yrs....	0	2	0		
Bet. 4 and 5 yrs....	1	0	0		
	59	84	52	Total	195
		Under Observation.			
1 year	28	18	14		
2 years	1	2	1		
3 years	0	4	1		
4 years	0	0	1		
5 years	0	2	0		
	29	26	17	Total	72
Undiagnosed, non-tub. or tub. of other organs..... 73					
Died 74					
Total 414					

Deaths occurred as follows:

		Incip.	Mod. Adv.	Far Adv.	
Within 1 year.....	1	15	43		
Bet. 1 and 2 yrs....	0	1	6		
Bet. 2 and 3 yrs....	0	2	1		
Bet. 3 and 4 yrs....	0	0	3		
Bet. 4 and 5 yrs....	0	1	1		
Bet. 5 and 6 yrs....	0	0	1		
	1	18	55	Total	74

In looking over the cases lost sight of and the cases under observation it will be noticed that a majority were lost sight of within one year and most of those under observation have been so less than one year, showing how transient these patients are.

It will be noticed that the deaths have followed very closely the original diagnosis as to stage.

To show that clinical experience is very much the same in other parts of the country I quote from Report No. 7 of the Henry Phipps Institute, dated April 1, 1913:

The patients under consideration visited the Phipps Institute in the second year of its existence, Feb. 1, 1904, to Feb. 1, 1905. The investigation was completed Sept. 1, 1911.

"Of 915 patients but 274 attended the following year and rapidly diminished each year. Applicants non-tubercular or not destitute 152. Patients known to be living at time of investigation, 184. Patients known to be dead, 380, or 41.5%. Patients untraced, 320, or 34.9%.

Outcome of 184 cases:

Prog- nosis.	No sympt.	Sympt.	At work.	Not working.
Favorable	121	80	18	82
Doubtful	34	19	16	22
Unfavorable	5	3	2	3
No record	24	In addition there were 24 who were living but gave no information as to their health or occupation.		
	184			

Of 107 now known to be living the sputum was positive in 9, negative in 47, and no examination recorded in 49. There was, however, one or more suggestive symptom.

We have dealt above with the most discouraging type of cases. Let us now consider the class of patients admitted to the New York Sanatoria, the tuberculous poor of New York, for the most part incipient, but a few in other stages who offered some hope of improvement. Nine hundred and seventy-five patients are considered; on admission they were divided as follows: 644 incipient, 252 moderately advanced and 79 advanced; of these 20.1% were discharged cured, 25.4 arrested, 33.6 improved and 20.8 unimproved. Five hundred and fifty of these cases were able to be traced and out of 358 admitted as incipient 12% died

within a year of discharge; out of 144 moderately advanced cases 23% died within a year of discharge and out of 48 advanced cases 25% died within a year of discharge. For a further study of these cases you are referred to a most carefully prepared article by Dr. Chas. F. Bolduan in an investigation carried on by The Council of Jewish Women, Monograph Series, No. 8, October, 1913, Department of Health of the City of New York. So it will be seen that the outlook is brightening with the selection of cases and with better means for care.

U. S. Army General Hospital, Fort Bayard, N. M., 1911. Result of treatment in completed cases.

	Ap. C.	Ar.	Imp.	Unimp.	Died.
Incipient 16	18.75%	12.5%	56.25%	6.25%	6.25%
Mod. Adv....196	4.59	7.4	70.40	14.79	3.06
Far Adv....144	0.00	.69	61.11	18.73	19.44

The Barlow Sanatorium, California, Tenth Annual Report, Sept. 1, 1913. "Requirements for admission. Free from complications. They must be in a condition so that a cure or improvement could be reasonably expected."

Apparently arrested, 19—32.75%. Quiescent, 9—15.51%. Improved, 20—34.48%. Failed, 6—10.34%. Died, 4—6.89%. A total of 58 cases.

The Pottenger Sanatorium, Monrovia, Cal.:

Number of patients discharged, 800.

Number remaining over three months, 468; covering a period of five years.

	I Stage.	II Stage.	III Stage.
Apparently cured or arrested. 92%	76%	36%	
Improved 8%	25%	38%	
Unimproved or died.....	6%	26%	

These sanatoria have been selected as types and because we are all more or less familiar with them. With the class of patients in the public hospitals where no selection is made the prognosis as a whole is not very good but as we go up the scale to the private sanatoria where the early diagnosed cases are cared for the percentage of cured and arrested cases improves.

In this paper I have not attempted to compare the results of home treatment with the treatment in sanatoria. Many patients will do better at home than at sanatoria but in all probability sanatorium treatment is preferable for a majority, for a time at least.

Notwithstanding our natural advantages in California we are not giving the tuberculous poor the opportunities they should have. I believe the cities and counties throughout the state are taking excellent care of the advanced cases, at least I know San Francisco is. The San Francisco Tuberculosis Hospital has made rapid strides forward in the past few years under its present management and in the near future it will probably have a new hospital building. The San Francisco Society for the Study and Prevention of Tuberculosis is likewise doing a good work but necessarily its field is restricted. The greatest good for the greatest numbers, however, can not be obtained until the state as a whole helps. There should be an establishment for the hopeless cases and for those under observation; a place for incipient and for the more advanced cases showing an improvement, and a place for discharged patients to earn a living where they may be under proper supervision. The above in addition to the clinics with social workers. It might be argued that each large community might have a complete set of institu-

tions but it seems to me that for economic reasons it would be better for the state to furnish one or two of these institutions, or, possibly combine two in one. Until these units are a reality patients in the present city institutions will continue to run around the circle: In the hospital until their improvement warrants their discharge to make room for more advanced cases, then after working a while at improper work to the clinic in a worse condition, then back to the hospital as bed patients. Too often have we who are doing dispensary work seen the operation of this circle. It makes no difference whether the patient returns again to the San Francisco Hospital or decides to go to the Los Angeles Hospital, the circle is there just the same and the prognosis in this great majority will continue to be bad.

Lastly, the opportunity for proper treatment and care. A majority of the tuberculous in every day life are not able to get this care and are obliged to work to support themselves and those dependent upon them at vocations not suited to their condition until the disease has progressed to such a stage that hope for cure or the arresting of the disease is out of the question. And this opportunity for proper treatment and care is by far the greatest factor in determining our prognosis, for without it hope is practically gone and in proportion to the degree of care and attention the patient is able to receive in that same proportion does the outlook for future improvement brighten.

THE TREATMENT OF PULMONARY HEMORRHAGE.*

By R. S. CUMMINS, M. D., Los Angeles.

My excuse for presenting a paper to this society upon this subject is the great variation and lack of logic of the medicinal treatment as given by the various authors.

In considering the treatment of a hemorrhage there are three essential things from the conditions of which must evolve the theories regarding the treatment. The first is the condition of the ruptured vessel; the second, the condition of the elements of the blood which make up the clot, and the third is the pressure under which the blood is flowing in the vessel.

In pulmonary hemorrhage there are two sets of vessels to consider, the bronchial and the pulmonary. Of these two sets there are three portions, any one of which may be ruptured, viz.: artery, vein or capillary.

Rasmussen,¹ in 1868, studied pathological specimens of the lungs in pulmonary hemorrhage, and came to the conclusion that hemorrhage nearly always took place from the pulmonary arteries. Preceding the hemorrhage small aneurisms were formed, which caused a thinning of the vessel wall. Probably the cases in which the sputum is only slightly streaked come from ruptured capillaries.

In considering the ability of the blood to form

a firm clot, the question immediately arises whether in tuberculosis, complicated by pulmonary hemorrhage, there is any change in the elements of the blood which produce the clot. While we have not tested the blood of tuberculous patients for thrombokinase, antithrombin, prothrombin, etc., yet we believe that for all practical purposes, if the clotting period is not increased, if the bleeding time is not lengthened, and if the blood platelets are not diminished, we may conclude that the blood condition is no causative factor in producing or prolonging the hemorrhage.

In our endeavor to ascertain the state of the blood we studied the blood platelets, clotting period and bleeding time upon fourteen cases of pulmonary tuberculosis, nine of which were studied during an attack of hemoptysis.

The platelets were counted after the technic of Wright and Kinnicutt² with the brilliant-cresyl blue and potassium cyanide stain. The clotting period was done with Duke's³ modification of Milian's method, in which a drop of blood 5 mm. in diameter was observed at 40° centigrade until firmly clotted, and the bleeding time was done with Duke's method. A stab wound sufficient to cause free bleeding was made in the ear and in one-half minute a piece of filter paper was applied, taking up all the blood. This was repeated every half minute until no blood appeared. The following table gives the results in the fourteen patients:

Hemorrhage Patients.				
Blood Platelets,	Highest	Lowest	Average	
9 cases.	1,194,000	344,000	548,000	
	Longest	Shortest	Aver.	
Clotting Time,	Time	Time	Time	
8 cases.	6 min. 30 sec.	4 min.	5 min. 12 sec.	
Bleeding Time,				
6 cases.	3 min. 30 sec.	1 min.	2 min. 10 sec.	
Patients Having Had No Hemorrhages.				
Blood Platelets,	Highest	Lowest	Average	
5 cases.	602,000	271,000	448,400	
	Longest	Shortest	Aver.	
Clotting Time,	Time	Time	Time	
4 cases.	8 min.	6 min.	6 min. 45 sec.	
Bleeding Time,				
3 cases.	4 min.	2 min. 30 sec.	3 min. 10 sec.	

From the foregoing it is noted that, taking 250,000 to 350,000 platelets as the normal, according to Wright's and Kinnicutt's investigation, the average number of platelets was increased in tuberculosis, a greater number being present in hemorrhage cases than in non-hemorrhage cases, the average being 548,000 and 448,400 respectively.

Considering the normal clotting time as being five to eight minutes, my cases all come well within this limit, the average in hemorrhage cases being 5 mins. 12 secs., as against 6 mins. 45 secs. in the non-hemorrhage cases.

Duke found the normal bleeding time with the method used to be one to three minutes. It will be seen that my cases all came practically within these limits, the average in the hemorrhage patients being 2 mins. 10 secs. and in the non-hemorrhage 3 mins. 10 secs.

We would conclude, then, from the few cases observed, that in none of them was the blood con-

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dition, so far as forming a thrombus in the ruptured vessel is concerned, a factor in causing or prolonging the hemorrhage.

Treatment. In considering the treatment we will take it up under three phases, viz.: forming the clot, constricting the end of the broken vessel, and lowering the blood pressure.

Forming the Blood Clot. Wright⁴ showed from his experiments in quite a long series of cases that in normal individuals he could decrease the clotting period of the blood from one-half to one-quarter the normal time by the exhibition of calcium. He also found that a single dose of 60 grs. of either the lactate or the chloride would take effect in 20 minutes, showing its maximum effect in 45 minutes and lasting from four to seventeen days. Hence it would seem that 60 grs. of calcium lactate or chloride, given immediately upon the onset of hemorrhage, would, by increasing the rapidity with which the clot was formed, assist in plugging up the ruptured vessels. This should be repeated in at least four days. Because of the increasing frequency with which horse serum is used in the treatment of diseases, and the lack of sufficient proof that it shortens clotting or bleeding time of the normal blood, we would suggest that it be discontinued in pulmonary hemorrhage unless there is a definite pathological change in the blood.

Ruptured Vessel End. Owing to the diseased condition of the broken vessel as mentioned above, it is probable that it does not respond to the vasoconstrictor drugs as adrenalin and nitroglycerin, but that on the contrary an injury is done by causing a constriction of the pulmonary arterial system, thus raising the pulmonary blood pressure, which is just the thing that should be avoided. Possibly the ice bag causes a constriction of the vessels immediately surrounding the area of hemorrhage, thus lessening the amount of blood coming to that area, and in this way is beneficial. The application should not continue over one hour at a time, or the cutaneous area will become so benumbed that the effect is lost.

Lowering Blood Pressure. This is probably the most important thing to be accomplished, and it appears that most of the routine treatment which produces any benefit causes it in this manner. Wiggers⁵ states that "the object of paramount importance is to promptly reduce the bleeding by such drugs as lower the pressure in the pulmonary circuit."

Rest in bed, without a pillow, and without even raising the head, is beneficial only as it lowers the blood pressure and lessens pulmonary movement. The blood should be expectorated into a basin or gauze without raising the head.

If the hemorrhage is rather severe, nourishment and liquids should be limited to chips of ice to quench the thirst for the first twenty-four hours, and to about one quart of cold milk during the second twenty-four. In addition to this a sufficient amount of a non-effervescent saline should be administered to produce two soft stools per day, as emphasized by Burns.⁶ This should be administered in a rather concentrated form, in order

to remove as much liquid from the blood as possible, thus perhaps lowering pressure and hastening clotting. The saline also assists in eliminating any of the pressor poisons, if there be such, which otherwise might be absorbed from the intestines.

In order to allay the excessive coughing, an opiate is advisable. Codeine or heroin, administered hypodermically or by mouth, are preferable, as they are less constipating than morphine.

A good rule is to give one-half grain of codeine every hour until the coughing is relieved.

The other drugs used aim directly at lowering of pressure, the principal ones of which have been carefully studied by Wiggers⁷ in his splendid work reported in 1911. In this work digitalis, strophanthin, ergotoxin, pituitary extract, nitroglycerin and chloroform were experimented with.

Wiggers found that digitalis produced an increase of both systemic and pulmonary pressure in dogs, both with and without pulmonary hemorrhage.

The action of strophanthin and ergotoxin was the same as digitalis, with the exception that there was no change in either systemic or pulmonary pressures during hemorrhage; hence, both should be discarded, except in capillary hemorrhage.

Chloroform was found to decrease both systemic and pulmonary pressures, as well as to slow respiration. This corresponds to the observations of Fish⁸ in hemoptysis, and hence would appear to be a beneficial measure. Fish recommends three to four cc. applied to gauze, or a mask, to be inhaled at the beginning of the hemorrhage, and followed by fifteen to twenty drops, every hour, for from two to three days.

The effect of the nitrites was rather peculiar. Wiggers found that they lowered systemic pressure in both normal and bleeding dogs, but that they increased pulmonary pressure except late in hemorrhages. The explanation of this is found in the recent work of Macht,⁹ who showed that strips of pulmonary arteries contracted upon the application of a solution of the nitrites. Macht reasoning from this suggests that they would be beneficial in hemoptysis. His reasoning, however, is faulty in that he evidently did not consider that the broken vessel was diseased, and hence would not respond to a stimulus as would a normal one. On the other hand, because of the effect of the nitrites upon the normal vessels, the pulmonary pressure would be increased, which is the opposite condition to be desired. This would lead one to believe that the wide clinical observation, leading to a belief in the efficacy of the nitrites in pulmonary hemorrhage, is at fault, and that their results are probably injurious instead of beneficial.

Pituitary extract was found to raise systemic pressure and to lower pulmonary pressure, both in the normal and bleeding animals, and hence would seem an ideal drug in this condition. Hypodermic injections of one-half to one cc. ampoules, given twice daily, seems to have borne this theory out in practice.

Atropin has been suggested because of its depressing effect upon the vaso-motor system and the relief it gives to the coughing.

Adrenalin would appear to be injurious, as its constrictive action upon the blood vessels would cause an increase of blood pressure.

Because of its depressing effect upon the heart and blood vessels, aconite has been used in hemoptysis. Three to five drops of the tincture given every three hours would undoubtedly lower pulmonary pressure. The liability of a hemorrhage patient to pneumonia and the frequency of some cardiac disease would certainly limit its usefulness.

I have purposely refrained from discussing artificial pneumothorax in pulmonary hemorrhage, because of the volume of recent literature which so thoroughly and completely treats all phases of this procedure.

From the few foregoing observations we would conclude the following:

(1) Because of the disease of the broken vessel, little good can be expected from the use of vasoconstrictor drugs, but injury may result from their action upon the portion of the vessel which is healthy, by raising the blood pressure throughout.

(2) Calcium, in dram doses, should be administered at once when hemorrhage from the lungs occurs.

(3) Neither digitalis nor strophanthin are indicated, except in capillary hemorrhage.

(4) Theoretically, nitrites, instead of being beneficial in pulmonary hemorrhage, are injurious, unless administered after the loss of a goodly quantity of blood.

(5) Absolute rest, little food or liquids, with thorough evacuation of the bowels by means of saline laxatives, are among the most important features of the treatment.

(6) Pituitary extract comes the nearest, theoretically, to being the ideal drug for this condition.

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THE BUREAU OF TUBERCULOSIS, ITS WORK AND PLANS.*

By BURT F. HOWARD, M. D., Sacramento.

The object of the Bureau of Tuberculosis as planned by the Tuberculosis Commission of 1911 is familiar to most of you. It was the intention of the commission that this bureau should super-

vise all work within the state bearing upon the preventive, curative and other aspects of the tuberculosis problem. That it should advise or direct all local bodies in making provision for the treatment of tuberculosis in sanatoria, hospitals, dispensaries, farm colonies and other institutions, both public and private; that it should advise with the officers of penal and charitable institutions regarding the care of tuberculous inmates and should make all necessary rules and regulations for the effective carrying out of the work of the bureau.

The law which was passed by the last legislature, as the result of the recommendations of this commission did not assign any such general duties as planned by the Tuberculosis Commission, but specified three groups of duties, 1. "The complete and proper registration of all tuberculous persons within the state." 2. The inspection of institutions treating tuberculosis, both public and private; and 3. Those assigned by the Board of Health, (including the duties of assistant secretary). The latter group was apparently intended to provide for the more aggressive and constructive work outlined by the commission.

For the work of inspection and registration and all other non-specified duties there was an appropriation aside from the salary of the director of \$750 a year. It is evident that this sum, after meeting the expenses of traveling, stenography, printing and postage, leaves little margin for carrying out the details of any elaborate system of tuberculosis registration, or method of discovering unreported cases.

The other recommendations of the Tuberculosis Commission which cannot become effective without large appropriations are, briefly, 1, The establishment of a system of tuberculosis dispensaries available for both the city and rural populations of the state. 2, Provision for advanced cases in special hospitals provided by the counties with state aid, either singly or by districts consisting of two or more contiguous counties; and by agreements between counties and private tuberculosis institutions. The commission also recommended 3, state sanatoria for early cases, and 4, farm colonies for incipient and convalescent cases.

Registration.—It is not necessary to point out at this time the importance of registration of tuberculosis, it is universally admitted among those who have made a study of the question, that no general campaign for the control or the eradication of tuberculosis can be properly planned or conducted without first ascertaining the extent and distribution of the disease. This bureau has made an effort to obtain the registration of tuberculosis, first by bringing the law which requires registration of tuberculosis to the attention of physicians. The first step taken in this line was the sending to 284 health officials a signed letter calling attention to the law. Later a letter was written to the secretary of each of the county societies requesting that the subject of registration of tuberculosis be given special attention in the local society and that the letter be read to each society. This letter was also published in

* Read before the Annual Meeting of the California Association for the Study and Prevention of Tuberculosis, held jointly with the Forty-fourth Annual Meeting of the Medical Society of the State of California, Santa Barbara, April, 1914.

the STATE JOURNAL. The subject of registration was presented briefly to the health officers at the Venice meeting in October and also to the San Joaquin County Medical Society at a very well attended meeting on January 20th. Other efforts in this line have been by personal request of the management of various institutions visited, and by a personal canvass of various towns where there was time to spare after visiting the local institutions. The results of this work are shown by an increase in the number of cities and counties reporting tuberculosis, which has been very gratifying. Two thousand five hundred and sixty cases have been reported in the six months beginning with October. If this is equaled in the next six months the total will approximate the number of deaths from all forms of tuberculosis in 1912 which was 5,128. We hope to do better than this, since 100% is a high mortality for tuberculosis, though not an uncommon ratio in the early years of tuberculosis registration, in which the registering of 70% of cases before death is considered good.

One thousand one hundred and forty more cases were reported than in the corresponding period of 1912, which is the only year for which complete returns are available though we expect to have them for 1913.

As a rule the physician is unwilling to report to the local health officer in the same community, although he would be willing to report directly to the state bureau. The plan of reporting directly to the State Board of Health has been found successful in Wisconsin. In Maryland physicians are permitted to send in their reports postage due and each physician was supplied at the outset with a dozen report cards and envelopes. These and many other devices for inducing physicians to report tuberculosis remain to be tried when it becomes evident that present methods are not effective. A new card has been devised to take the place of the "communicable disease blank" which has up to this time been used for making full returns on communicable diseases, including tuberculosis. The reason for making this change is to call special attention to tuberculosis, and to get definite information on certain sociological points which are of more importance in the consideration of tuberculosis than in that of other communicable diseases. It seems probable that whatever form of appeal to physicians may be adopted no plan will be successful in obtaining a complete registration which depends solely upon the voluntary co-operation of the busy general practitioner. It is to the dispensary that we must look for the solution of this portion of our problem as well as for the solution of many other difficult phases of the same.

Hospital Inspection: The department has made inquiry as to what hospitals throughout the state have departments for treating tuberculosis; replies have been received from 161 hospitals and sanatoria of which about 50 receive tuberculous cases. There are a number of others which receive tuberculosis for diagnosis only, and a few county hospitals which have not been heard from.

County hospitals report, as a rule, that they receive all applicants but many of them have no special provision for tuberculosis cases. Of the 58 counties of the state there are 53 county hospitals which have reported the number of beds assigned to tuberculosis, the total number of beds assigned being 809; of these 20 have been inspected with a capacity of 670 beds. There are 16 county hospitals which are reported to have departments for tuberculosis; of these 12 have been visited. These 12 afford three-fourths of the total county hospital accommodation for tuberculosis.

There are 11 state institutions with approximately 140 beds available for tuberculosis cases. This includes institutions which up to this time have had no definite assignment of beds for this purpose. One of the results of inspection has been to stimulate these institutions to make special provision for the isolation and care of tuberculosis where this was lacking.

There are 17 private sanatoria for tuberculosis with a total of 500 beds, and 8 other hospitals, including two federal hospitals, with a total of 151 beds. This makes a total of 1600 beds available in the state for tuberculosis. Of these 1400 have been inspected.

As to the efficiency of this provision it is apparent that it is numerically entirely insufficient. The private sanatoria and other private hospitals are doing good work, each to a large extent covering a field of its own.

There is great variation in the kind of provision made by the counties for the care of tuberculosis. With but few exceptions the county hospital and poor farm are one, and it is considered a disgrace to go to the poor farm, hence the county hospital is as a rule used only as a last resort by the self-respecting members of the community. This is a strong argument for the erection of independent hospitals for the treatment of tuberculosis. Another objection to the prevailing arrangement is that these institutions are run with a few exceptions chiefly with a view to economy of administration rather than to the possibility of cure or comfort to the patient. The exceptions show that it is possible for a county to conduct a hospital for tuberculosis along the lines which are generally recognized as suitable for the conduct of a tuberculosis sanatorium or hospital.

Even though certain hospitals are able to charge a reasonable sum, both in the general and tuberculosis departments, to those who are able to pay, there is not much evidence which would lead one to suppose that it would be an easy matter to so alter public sentiment that county hospitals would ever become a factor in the prevention of tuberculosis by providing hospital care to a large number of semicharitable or pay cases. However, it is possible that if the public were generally awakened to the need, and a large number of fine county hospitals were established apart from the poor farms, that a change of sentiment would take place.

It is gratifying to observe that following the inspections of this bureau certain of the county

hospitals as well as of the state hospitals have instituted measures for the better care of tuberculosis patients. While perhaps all that could have been expected in seven months of this kind of work has been accomplished, it will amount to but little with respect of the prevention of tuberculosis, unless the county can be made to take its place in the plan of a general campaign.

"The Tuberculosis Campaign": To one who follows the trend of events it is apparent that the anti-tuberculosis campaign which had its inception with the discovery of the tubercle bacillus, and accomplished many of its ideals within the past five or ten years, has at last met the foe. Up to this time the civilized world was like a subservient race oppressed by the scourge of tuberculosis. It had never risen and therefore had never been defeated; now the battle is on we may say at least in Scotland, England, Switzerland, Germany, New York, New Jersey, Pennsylvania and other countries or states which have measured their strength against that of the tubercle bacillus by establishing a system of hospitals, sanatoria and dispensaries, with a view to the care and prevention of tuberculosis.

California thus far has conducted a guerilla warfare with a shot here and there, but it has not as yet attempted a campaign like that of New York, with its slogan "no uncared-for tuberculosis in 1915" ("1915" has another meaning for California) California is looking to the East in order to benefit by its experience, and the East is watching California to see what she will do with her tuberculosis problem.

There are at least three things we may learn of the East:

First—It has, to some extent, underestimated the size of its problem in attempting to provide hospital care for advanced cases, chiefly perhaps, as Dr. Homer Folks said in his opening address last year, "by reason of the fact that under suitable conditions of shelter, food, and abstinence, moderate and even advanced patients often live a long time. The full volume of the burden which we may have to carry of unproductive invalids, in order to prevent infection is perhaps not even yet clear, but it is evident that it is very large."

Second—The problem is a sociological as well as a medical one; and an important corollary of this truth is that the tuberculous individual can not be considered apart from his family, "The patient, his family and his environment are one and indivisible."

Third—The medical aspects of the problem are not yet clearly defined. The medical profession is not always united in giving its support to plans proposed to combat tuberculosis nor is it always intelligently interested in tuberculosis work. In evidence of this I need only cite the difficulties which the British Government met in carrying out the provisions of the National Insurance Act of 1911. (A most wonderful piece of legislation, which was enacted, as Lloyd George says, "With the hope of reaching a new stage in the resources of the state for the welfare of the least as well as of the greatest of its members.")

One of the most interesting papers at the Washington meeting of the National Association was to my mind that of Drs. Biggs and Bolduan on the influence of the tuberculosis campaign, on the methods of public health work generally, pointing out as it did the success of carefully organized public health methods developed in anti-tuberculosis work, and now coming to be applied to the administrative control of other preventable diseases.

If this state were willing to establish a complete system of health control along these lines there might not only be a great improvement in general health, but there would be no occasion for a special machine for tuberculosis control.

"The Dispensary:" In California, however, it is probably true as it has been in other states that tuberculosis must first point the way, and for this reason I wish to ask your attention to the dispensary as the first unit of tuberculosis control. This is defined as an institution (or "institute," as it is called in Wales and elsewhere) which has for its primary objects the discovery of cases of tuberculosis, the education of the community, the after-care and employment of patients and assistance to their families by various indirect means including co-operation with local physicians and charitable organizations.

A state dispensary should be called a "station" of the Bureau of Tuberculosis and should scrupulously avoid giving specific treatment until it can be shown that it is absolutely necessary for the success of the system.

We have in California six dispensaries and clinics for the special treatment of tuberculosis, one at each of the following places named in the order of their founding: Los Angeles, San Francisco, San Diego, Oakland, Berkeley, and San Jose. During the greater part of their existence these dispensaries have been supported mainly by private charity and consequently have been obliged to place more emphasis upon those lines of work which are obvious and make the strongest appeal. Thus some are often obliged to pay more attention to treatment and material assistance, namely, "milk and eggs," than to the discovery of cases of tuberculosis, after-care and employment of patients, or to epidemiological or sociological studies which might serve as a basis for future scientific handling of the tuberculosis problem, if conducted on a large scale.

I would suggest therefore that in so far as possible these or similar existing institutions be induced to co-operate with the state in this latter aspect of the work. This could be brought about by some form of subsidy as is already being done in Oakland and Berkeley by the local government.

The Tuberculosis Commission proposed, you may remember, the establishment of 15 dispensaries under full time medical officers, each to cost the state \$10,000 a year. While this plan is admirable, it seems to me that comparable results might be obtained at less expense by co-operation with existing dispensaries and that when these have been brought into harmonious co-operation

with the state the work could be extended gradually both in the city and country districts.

Since the total annual appropriation for all health work in the state, outside of the insane hospitals and Bureau of Nurse Registration, is but \$120,750, we cannot expect those who are not particularly interested in tuberculosis to subscribe to a plan calling at the outset for \$150,000.

If the Bureau of Tuberculosis is to accomplish anything definite, stations must be established throughout the state for this sort of work; and if nothing more is accomplished at this meeting, I wish to ask your approval of a plan to establish one station in Los Angeles and one in Oakland which shall have in view the following objects:

First: To promote complete morbidity returns of tuberculosis in Los Angeles county, and the metropolitan district of Alameda county.

Second: To make a sociological survey of families reporting tuberculosis, with a thorough investigation of home conditions such as the number of adults and children exposed under bad conditions.

Third: To prevent the development of tuberculosis in children by: (a) Improving home conditions (instruction of parents, removal of infected member, reporting housing conditions, referring to clinics, etc.) (b) Improving school conditions (to be preceded by a study of existing conditions including the collection of statistics, as to the effect of open-air schools upon the health of pupils). These stations would of course co-operate with the city health department, the school department, the various local dispensaries and other social agencies.

The estimated cost to the state of one of these stations is \$3,000 a year.

Salary of secretary.....	\$100 per month	\$1200
Salary of visitor or visiting nurse	100 " "	1200
Office expenses and carfare	50 " "	600
		<hr/> \$3000

The legislature appropriated \$5,000 for a commission to "investigate the problem of tuberculosis in California, and to recommend an effective and comprehensive plan for the control and gradual eradication of the disease." It would certainly be logical that it should adopt the plan proposed by that commission so far as possible, unless in the course of time, evidence should arise to show that the plan is not a good one. The first step was the establishment of the State Bureau of Tuberculosis which cannot fully accomplish the purpose which was intended by the commission without the other units of the plan. Of these the first in importance was the dispensary, the second, the county tuberculosis hospital with state subsidy, and the next, district sanatoria and state farm colonies for early and convalescent patients. It is for you, gentlemen, to establish the present status of the plan proposed and to unite in the support of whatever plan may be agreed upon.

AREQUIPA SANATORIUM, A SOCIOLOGICAL AND ECONOMIC EXPERIMENT IN THE CARE OF TUBERCULOUS WAGE EARNING GIRLS.*

By PHILIP KING BROWN, M. D., San Francisco.

Arequipa Sanatorium makes no claim to any distinguishing characteristics save in its efforts to meet a social and economic problem made very plain by the three years' work of the Tuberculosis Class of the San Francisco Polyclinic—the need for a place where young working women could go with their early tuberculosis and be cared for at a rate within their means, with no element of charity and with the added opportunity of earning part or all the cost by some form of work which they could do safely on a commercially successful basis.

It undertook also to secure co-operation in the support of early cases at the sanatorium from employers of female labor and from social and labor organizations.

Finally it has tried to carry on some educational work among the 40,000 working girls in San Francisco, among whom the death rate from tuberculosis is twice as high as among men.

The first part of the problem, providing a place where early cases could be cared for at a modest rate, was made possible by the generous gifts of land and money for building, of services of architect and wise counsel of experienced people, until within a few months \$20,000 had been spent in providing a very complete plant for 24 patients, including water supply and sewage system, a laundry, a stable and equipment, servants' building, work building and a cottage for the visiting physicians and managers. From the first there was a hope that all expenses might be met from the payments of \$1 a day by each patient and it is a satisfaction to say that this rate has thus far—over a period of two and one-half years—covered the expenses of board, nursing, laundry, household and upkeep of grounds and provided repairs and renewals. The only exceptions to the dollar a day rate are patients obliged to be continuously in bed, who are charged \$1.50 a day. Patients' individual laundry is done for them, but they are charged for drugs for other than their tubercular trouble. It is the aim of the sanatorium to take only early cases and to avoid receiving any who would have to remain in bed.

Our class experience has taught us that rarely do third stage cases among the working class become again active factors in the industrial world and that most second stage cases reach only the "apparently cured" state and relapse sooner or later. We do not feel that we ought to take any third stage cases except where cavities have shown signs of organization, and constitutional symptoms have long since ceased. In other words, while admitting that even third stage cases can recover sufficiently to do light work, we expect to take such cases only when they have shown decided gains and when they are ready to make a trial

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of work. We want to limit our care as far as possible to cases who can be helped to recover and taught how to live so that they may go back to *work* without danger of relapse. Merely keeping such cases alive indefinitely is not part of our scheme.

Very early in the plan, when seeking to limit its scope as much as possible, we decided that women had much less opportunity of recovering from consumption than had men. The healthy outdoor occupations which were open to them, without their being a danger to those associated with them, were vastly fewer than those open to men. For that reason and because it has been found unsatisfactory to mix the sexes we deemed it best to limit the work to women.

We were tempted to borrow from Dr. Peers the use of the word "school," which means to those who are interested in this cause that patients are taught how to meet all the problems connected with tuberculosis, but we felt that Dr. Peers had done so much to make his school a satisfactory and powerful factor in this work that it hardly seemed fair to duplicate the name. From him and from several earnest workers in this field in the south we got much help in planning our work.

The finding of suitable occupation presented great difficulties. Many varieties of handicraft had been worked over at Miradero Sanitarium for the past fourteen years, where for its re-educational influence on the nervous system, various occupations for neurasthenics have been systematically tried out. Among these were leather carving and stamping, wood carving, bead work, weaving on looms, and instruction in botany, zoology, astrology and ornithology. The class members of the San Francisco Polyclinic Tuberculosis Class had made baskets of raffia and willow, but they possessed no market value. Patients were provided with material for various forms of hand work all with the same result, a product was turned out which had no special merit and frequently hours of time were spent on an object that at best could bring but a few cents. Besides this not everything made could be rendered sterile by any process of disinfection without risk of ruining the article. The objections to artificial flowers, straw-work, unwashable embroidery, etc., are obvious. Then, too, many of the women in the class were married and had children and households to care for and many of them had never had any training in handicrafts. The idea of making pottery came to us from Dr. Hall, who conducts at "Devereux Mansion," Marblehead, Mass., a remarkable institution for the care of nervous cases, in connection with which is a successful pottery, where part of the work is done by the patients. The history of a number of potteries in the country is associated in some way with providing occupation for educational purposes or for handicapped people. It is particularly true of the famous "Rookwood Pottery," begun in Cincinnati by Mrs. Maria Longworth Storer, more than 10 years ago, as well as the "Bowl Shop" in Boston by Mrs. Helen Storrow, who began by providing occupation for little Italian children off the streets.

In the two and a half years of our pottery experience at Arequipa we have in only a few instances had patients who earned their entire support, although at one time there were as many as four on this list. No one is obliged to go to the pottery and no one is allowed to go who is coughing, or who has within a week had a temperature as high as 99°. Our routine in handling patients is very much that of other institutions. On arrival they are put to bed and kept there until the temperature has been normal for several days, whether it has been above or below when they reach the sanatorium. If they are coughing excessively they are kept in bed until this ceases. When they wish to work in the pottery they are allowed to begin on one hour a day, and generally this means that they are put at something that requires no special effort. They are not paid until they have learned to do work that is of some actual assistance, and sometimes a week or so may elapse before they reach this stage. In the meantime, if conditions continue favorable their working hours are increased to two or three a day, none of them working more than five hours a day, and no one works on Saturday or Sunday. As much as fifteen dollars a week has been paid for the twenty-five hours of work accomplished by some of the girls before they leave, and as high as one dollar and fifteen cents for a few hours' work has been earned within three weeks of beginning the work.

The heavy work of preparing crude clay, now obtained largely on the premises, which must be ground through sieves, is done by orphan boys sixteen or seventeen years old, who are learning the trade, although paid sufficient wages to hold their interest. The entire management of the work is under the direction of Mr. A. L. Solon, the son of Louis Marc Solon, one of the most distinguished art potters in England in the last quarter century. The carrying out of the modeling is under the direction of Mr. E. Frey, who was for four years at Rookwood Pottery, who graduated from the New York School of Design and who worked later with St. Gaudens. The furnishing of designs and the critical supervision of the art feature of the work has been the generous contribution of Mr. Bruce Porter and Mr. Henry Atkins. It would be unfair not to mention the contribution to the success of this work which we owe to the interest of Mr. F. W. Dohrmann, of the Dohrmann Commercial Company, who handles for us the vast majority of all the pottery that we sell. Mr. Dohrmann's interest as a layman in the problem of tuberculosis has made him a strong factor in the support of our work.

And now the question, Do we make it pay? There was a time in the beginning of the work, when the interest was very deep on the part of the public, that we more than cleared expenses. The manager at that time became somewhat too ambitious and a quality of work was turned out, very little of it made by the girls, for which there was no market. Under the present manager we have devoted ourselves to the type of things that the girls can do entirely. The pottery that you see is their work, and under this same manager,

barring the salary paid him, much more than half the money paid in wages is paid to the girls.

At present our expenses at the pottery, of about six hundred dollars a month, are almost met by our sales, the deficit of about one hundred and fifty dollars a month being met by friends, and we hope by advertising to increase the sales sufficiently to put the work shortly on a successfully paying basis.

We have had frequent cases where no special gain was made until they began to work, and no girl has had to give up work because of any bad effects. There is a generally better atmosphere about the sanatorium on the days when the girls are at work, and considerable ability in modeling and decoration has been uncovered in a large number of them. Much of the work is simple enough to require no special aptitude, and the girls teach each other, so that the labor of supervision is reduced to a minimum.

It is gratifying that in no single instance have the employers of the girls with early tuberculosis refused financial assistance to their employees at our solicitation. We have sought to secure this co-operation, not on the grounds of charity, but as a contribution to the cause from business and manufacturing houses, and we have limited our requests to cases where the women have held their positions for at least one year and have tuberculosis in its early stage. From the Emporium, the White House, the Pacific Telephone Company, Rosenberg Brothers and numerous others we have had one or more cases. Private individuals have assisted in paying the way of about one-quarter of the girls. The Associated Charities of San Francisco, through the Red Cross Fund, have sent us a large number of patients until now, when their funds are exhausted. Fraternal and social organizations have paid for eight or ten girls. It is evident from our experience that at least one-third of the patients must be helped financially, to remain under care as long as they ought to remain.

We have been able thus far to help every girl to stay at Arequipa even after her money has been exhausted, until other conditions made her departure or discharge necessary.

Unless we can take only girls so little handicapped by their disease that they can go to work in the pottery soon after arrival, or unless some one gives us a number of endowed beds, it is going to be impossible in the future to keep up the work of raising money to keep girls in the institution. We have felt that our labor should end in providing them at a minimum cost with the best possible care and surroundings. If we extend our efforts further, it seems to us they can be more profitably expended in educational work along health lines among San Francisco working girls.

SOCIAL INSURANCE IN ITS RELATION TO TUBERCULOSIS.*

By J. N. FORCE, M. D., Berkeley.

Tuberculosis is the "great equalizer." With

the exception of those individuals whose income is derived from an invested principal, every case of advanced tuberculosis must eventually accept charity. The charity may be either public, as the clinic or county hospital, or private, measured in terms of the transferred work and wages of some relative. The average physician dislikes to assume charge of a case of tuberculosis. That is why so many people are sent out to Arizona. There is no advancement, financial or otherwise, to be obtained from watching over the last days of a middle-class consumptive. There is only an opportunity to contribute to the before-mentioned private charity, by not sending a bill afterwards.

The especial aggravation lies in the fact that the disease is so absolutely and entirely preventable and its control is so well understood. We know exactly what to do for every case of tuberculosis in every stage of the disease—if he has money enough. We know how the offer of free treatment in a clinic will act as bait to catch a single case, and by means of a visiting nurse, we know how to catch the rest of the family. We also know just what to do for all the members of that family—as long as the money holds out. We know how to run a cottage sanitarium, a day camp, a night camp, an out-of-door school, a hospital for advanced cases and all the other machinery—if we have gasoline and oil enough.

It is remarkable sometimes how quickly tuberculosis will bring a family down to the charity basis. I once knew of a family consisting of father, mother and four children. The second child had coughed up blood, the third child had a chronic cough and the fourth had a cold. The father was on a good salary and the family lived in an excellent residence district. In less than a week after the diagnosis was made, the mother had taken the three younger children to a cottage colony, the father and oldest daughter remaining behind to "break up housekeeping." Hardly had the family reached the colony before the father "lost his job," with the result that the family has been living on medical charity ever since, and the mother has been taking boarders to pay the cottage rent.

The administrative and medical standards of most of our county hospitals do not appeal to the working man. Carrying as they do the stigma of poverty, often associated with a poor farm, distant from centers of medical activity, inaccessible to the hard working members of the patient's family, is it any wonder that they are regarded as infernos of abandoned hope? The families of a certain class have a mortal fear of being broken up. So we have the paradox of a man concealing his disease, so that he may continue with and work for his family, while at the same time he is sowing the seeds of destruction among them.

In order to save the children while caring for the adults, it is evident that any solution of the tuberculosis question must consider the entire family and deal with the financial problem involved in a recognition of this social unit. Open air schools are good, the Arequipa pottery idea is good, the farm idea is good, but they all depend for their highest efficiency on the care of early cases, and how are

*Read before the Annual Meeting of the California Association for the Study and Prevention of Tuberculosis, held jointly with the Forty-fourth Annual Meeting of the Medical Society of the State of California, Santa Barbara, April, 1914.

you going to get the early cases if your patient or even his doctor hasn't suspected the presence of tuberculosis in the children of the tubercular environment? Provision for state hospitals for advanced cases, or departments of tuberculosis in connection with county hospitals are justifiable *curative* measures, but there will be no real *prevention* of tuberculosis until we can transplant an entire family into the favorable soil of a cottage colony without one cent of expense to that family. There is only one basis on which this ideal condition can be made possible, not as charity, but as a right. That basis is—Social Insurance.

Some medical men do not approve of social insurance. They complain that it will bring down the prices of medical service. These gentlemen evidently haven't considered averages. What is the difference, between the man who, with the aid of a collector, gets 50% of his earnings on a three dollar a visit basis, and the man who gets 100% (no collector) of his earnings on a one-fifty basis? Under the provisions of the British National Insurance Act, the 20,000 state physicians, last year, received an average of \$1150 each, over and above income from private practice. An increase of the average physician's income by \$1000 means more business for everybody, consequently more early cases seen, and an inevitable lowering in the morbidity statistics. The British state physicians are already saying to the state: "We find that the people are not in need of drugs, as much as better food and improved industrial and housing conditions; you are wasting money on curative measures that should be spent on prevention."

In Germany, the insured workman can retire to a "preventorium" when he is "run-down." Cannot each one of us think of some one now engaged in "taking the cure," who might have "taken the prevention" two or three years ago at great financial advantage to himself?

We hear a good deal nowadays about medical examination of employees. If industrial establishments and corporations took out tuberculosis insurance for their workers, it is easy to see that examination for entrance into the service of that corporation or establishment would be strict, and no condition would be tolerated in the industrial environment which might lower the resistance of the worker. Many organizations in this country have made progress along this line. The Metropolitan Life Insurance Company maintains a sanitarium for its tuberculous employees and conducts a system of welfare work among its policy holders. I am informed by Mr. F. A. Wickett of the New York Life, that his company will insure the life of any person suffering from a disease whose mortality rate is 200% higher than the normal mortality rate for the age of the person desiring insurance. It would be but a step further for the insurance of a disability policy to a family group, none of whose members showed open lesions, i. e., whose sputum contained no Much's granules and did not cause tuberculosis by inoculation of a guinea pig. The holders of such a policy would be compelled to answer certain questions at the time of paying the annual premium, or preferably

would be given a medical examination. In the first event, any answers comparing poorly with the answers of preceding years would lead to an examination. Cancellation of the policy would be consequent on failure to act on resulting advice. The instruction and welfare features which have already been developed would be extended.

It would be more in accord with our modern socialistic tendencies to add tuberculosis insurance to the present state industrial insurance. In this event, contracts might be made with existing tuberculosis agencies until the insuring body could provide its own equipment. The one essential in any scheme is to consider the family as a unit and supply the needed service for each member. Needless to say, the benefits of tuberculosis insurance should never be paid in money. This would lead to many abuses. There would be need of relief centers to which families could be transported. Removal of the patient only, special nursing service, or the payment of fees to local physicians for the care of adult policy holders would not reach the preventive aspect of the question, for at best these efforts would only affect the patient, and he might be a victim of a "carrier" from a preceding generation of his own family, who might in turn if undetected claim his children as victims.

We have in California an Association for the Study and Prevention of Tuberculosis. It is like every other society of its kind in the country. It appeals to the philanthropic few. It should appeal to the selfish many. It should offer something definite to the great middle class, which means everybody whose income is not derived wholly from invested capital. State medicine is coming; the private physician will sometime be classed with the private school teacher. Even the "stand-patter" must admit that he derives no benefit from his tuberculous patient. Why not foster true preventive medicine, by assisting in the perfection of a plan for converting our state association into "The California Association for Insurance Against Tuberculosis?"

INDUCED PNEUMOTHORAX.*

By EDWARD VON ADELUNG, M. D., Oakland.

Pneumothorax is now a recognized method of treating pulmonary tuberculosis. First suggested by Carson, an English physiologist, it was first actually practiced by two men independently, Forlanini in 1892, and Murphy in 1898. It depends for its rational explanation on a fact long recognized in relation to surgical tuberculosis,—rest for the affected organ. Indeed, many attempts had been made to secure rest for the lung by means of bandages, plaster casts, adhesive strapping, and other devices, before the far better method was developed, that of introducing gas into the pleural space to secure collapse of the affected lung, thus obtaining physiological rest of the organ.

Two methods are accepted for the introduction

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of the gas: the Forlanini or blind method, and the Brauer or open method. The former is accomplished by simply passing a hollow needle through the thoracic wall till its lumen lies within the pleural sac. The Brauer operation comprises incision, dissection, and the passing of a catheter through a slit in the parietal pleura. While both operations have their advocates, the writer favors the Forlanini puncture.

In practicing either operation certain accidents may occur. Subcutaneous emphysema is due to leakage backwards through the pleural opening, the gas collecting and burrowing in subcutaneous tissues. While at times very distressing, this complication must be regarded rather as an inconvenience than as a danger, for it has never been followed by serious consequences. The second accident to be mentioned is hemorrhage from the opposite lung (when diseased), when it expands to compensate for the compressed lung. While this is a rare accident, it occurred in two of my series of 42 cases. Neither case was serious, however. Again, in introducing the needle through the chest wall, it is not uncommon to pierce the lung unintentionally. If the lung is adherent, a common condition, this is unavoidable. However, I have never seen more than temporary pain or transient blood-stained sputum result. While it is doubtless possible to infect the pleura from the lung in this way, this really happens rarely. It is nevertheless to be avoided as much as possible. In early inflations or when high pressures are induced, dyspnea is likely to occur. It is usually temporary, disappearing in twenty-four hours, except in serious bilateral cases. It is to be avoided by attaining full compression only after several inflations, and by avoiding high pressures.

An accident of some consequence is pleural effusion. It is accompanied by a train of unpleasant symptoms, and may become an empyema if infected. Otherwise a few weeks or months suffice for its absorption and no ill effects follow. It may be regarded as Nature's effort to the same end as pneumothorax,—compression,—and does not forbid inflations unless causing considerable pressure. Pleuritic effusion is a rather common complication, resulting according to some authorities, in 50% of the cases. In my series of 42 cases I had only six effusions,—about 14%.

The most serious of the accidents are pleural reflex, and gas embolism. The distinction between the two conditions clinically, is not clear. Both present the following syndrome: fainting, pallor, convulsions, and perhaps temporary or permanent paralysis, usually in the form of hemiplegia, and occasionally death. Forlanini regards "pleural reflex," or "pleural eclampsia," or "pleural shock" as a distinct entity, and supports the contention by animal experiments. Still, Sampson and Brauer attribute the syndrome to gas embolism in all cases. Personally, I have met with no such accident in over 614 inflations, though I have seen the syndrome in a dog following a large and rapidly induced pneumothorax. The paralysis disappeared in the dog in a few minutes. Whatever

may be the cause of this syndrome, it is important to note the means of avoiding it.

A preliminary injection of morphine hypodermically, is recommended as a preventive, and probably serves the purpose. But the writer considers it unnecessary and objectionable for the usual reasons. The Brauer incision, which permits the avoidance of gas embolism by allowing the operator to see where the gas is delivered, is urged as a preventive. Others prefer to inject saline solution or oxygen on the theory that these do no harm in the blood current, and if it is found that the needle is not in a vessel then nitrogen may be allowed to enter. The writer's conviction in this matter is that pleural reflex, such as results from the injection of irritating fluids into the pleural sac, and gas embolism are both to be avoided by using warm and moist nitrogen, and by anesthetizing the pleura properly, and by accepting the manometer reading as the guide. Not until the manometer registers a sustained mean negative pressure with oscillations, should gas be allowed to flow. This refers to the needle operation, the only one with which the writer is experienced.

Considerable study has been made of the indications and contraindications for this operation, but writers are still at great variance. While at first only hopeless cases were considered suitable, soon well advanced unilateral cases were accepted, and now there are those who advocate the operation in all stages of the disease. The American discoverer of therapeutic pneumothorax, basing his opinion on the mechanics and the rationale of the operation, stated very early that the procedure was especially adapted to early cases when adhesions are not likely to be present, and while the lung is elastic and capable of collapsing. In a very recent article, fourteen years after his first utterance, he reiterates that view, and concludes that artificial pneumothorax should always be tried in every case of pulmonary tuberculosis where there is no absolute contraindication. While fully aware of the danger of radical views, indeed while instinctively conservative, the writer feels convinced from experience that Murphy's view of the indication for pneumothorax is correct. It is of course readily admitted that ultimately there will be found a certain class of patients, perhaps the earlier cases, that will yield the best results. But this does not interdict the use of the operation as an alleviative measure—to stop cough, to control hemorrhage, or to prolong life for a time—in other classes of cases.

The pathology of pneumothorax is particularly suggestive of its value. According to Forlanini, Saugmann, Graetz, Warnecke, and Kistler, the most important tissue changes are the following: There is marked fibrous formation, and evidence of advancing disease cannot be found. Old caseous areas are surrounded by dense fibrous tissue. The alveolar epithelium is transformed into the cuboidal or columnar type. The lymphatics are dilated and richly pigmented, a condition indicating marked stasis of the lymphatics. The circulation of the blood is likewise altered. Even after long compression, when released, the alveo-

lar cells re-expand and again functionate normally. Thus the pathology expresses the beneficial effect of the procedure.

From the evidence thus far adduced it seems to the writer that induced pneumothorax has a proven value, and should be used very generally in the treatment of pulmonary tuberculosis. I believe also that theory, pathology, and the little clinical experience recorded in this particular, all unite to indicate that lung compression should be employed in early cases as well as in advanced cases. Only distinct contraindications, such as extreme dyspnea, marked asthenia, grave implication of other organs, or mechanical barriers such as adherent pleura, or pulmonary fibrosis,—only such conditions actually contraindicate its use as a cure or as an alleviative.

The writer's experience is limited to 42 cases, in which he found pneumothorax impossible in only 5 (Forlanini operation). However, it should be stated that some of the remaining 37 cases allowed of the introduction of only small amounts of nitrogen, in some cases of no therapeutic value. The total number of inflations was 614, and all pneumothoraces were confirmed by radiograms. There were no pleural reflexes or gas emboli. In six cases pleuritic effusion ensued, one of them becoming purulent. All the cases except one were well advanced bilateral infections. And all but one were ambulant patients, treatments being given either at the office or at the clinic. Of the 37 cases in which pneumothorax was obtained, 8 were unimproved and 29 improved, of which one is entirely free from symptoms.

DIAGNOSIS, SIGNIFICANCE AND TREATMENT OF BRONCHIAL GLANDS IN INFANCY AND CHILDHOOD.*

By WILLIAM PALMER LUCAS, M. D., San Francisco.

The problem of early tuberculous infection is becoming more important as we realize that the primary infections remain dormant for long periods of time rather than short. Our conception of these primary infections has changed radically during the past few years. Among students of tuberculosis there are now recognized three fairly definite stages or periods through which the average tuberculous case proceeds. This is somewhat analogous to the three stages of syphilis. (1) The primary infection in tuberculosis as in syphilis is an infection of the regionary lymph glands which as a secondary process (2) spreads to neighboring structures by direct connection as the peribronchial tissue from the bronchial glands, and (3) what is now spoken of generally as tuberculosis is really the tertiary form of tuberculosis and occurs often years after the primary infection, spreading diffusely not only to neighboring structures, but often to far removed organs, and has a tendency, which the other two forms do not have, of producing cavities. It is a fact worthy of consideration that the majority of primary infections run a chronic course rather than

an acute. The main exceptions to this are found in tuberculous infections occurring in the first few months of infancy. Infections occurring after the second year are more apt to be chronic than acute. Further exceptions are the types of general miliary tuberculosis and tuberculous meningitis, which often is simply the meningeal manifestation of a miliary or acute diffuse process. The primary stage of a tuberculous infection is now conceded to effect mainly the glandular system, spreading as a secondary manifestation to neighboring tissues or organs. The primary and secondary involvements may have a fairly close time relationship, whereas it is more common to find the third stage appearing, if it appears at all, very much later.

The typical picture is a primary involvement of some one of the most important glandular chains. Thus a tonsillar infection leads to involvement of the cervical lymph chains. A primary bronchial gland involvement spreads through the different chains of glands surrounding the bronchi. Peritoneal glandular involvement follows the same general course involving the peritoneum. Secondary involvement from these chains is usually of the surrounding tissues. The glands themselves may not necessarily go on to caseation to infect the surrounding structures. It depends more on the number and rapidity of growth of the tubercle bacilli, and their egress to the surrounding tissue. If the glands do go on to rapid caseation we are more apt to have a disseminated acute tuberculous infection. That form we are all more or less familiar with and I shall not concern myself in enlarging upon it.

I wish especially to deal with the primary infection of the bronchial lymph glands. In order to do this I wish to take up briefly first the anatomy of the bronchial glands, especially their relation to infection during the period of childhood, leaving out of consideration infancy and later adult types of infection.

The anatomy of the child's chest is somewhat different from that of the adult. It is rounder and shorter, the antero-posterior diameter is greater than the lateral. In adults the ratio of these diameters is as one to three, whereas in childhood it is as two to three. The ribs are more horizontal which makes the position of the sternum higher and the angle of the ribs more obtuse. The chest is very much more compressible and elastic so that the respiration and cardiac conditions stamp themselves more easily on the contour of the chest. Thus the chest yields more easily to interthoracic pressure. The pull of the muscles tends to flatten the sides of the chest. The central portion of the diaphragm is higher. On account of the slope of the chest the lungs are situated more posteriorly, and the diaphragm from its high position encroaches upon the capacity of the thorax. The respirations are diaphragmatic. Expansion is likely to be irregular changing from superficial to deep so that the interval and depth of respiration vary so much within physiological limits that we have to be careful in laying particular stress on such find-

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

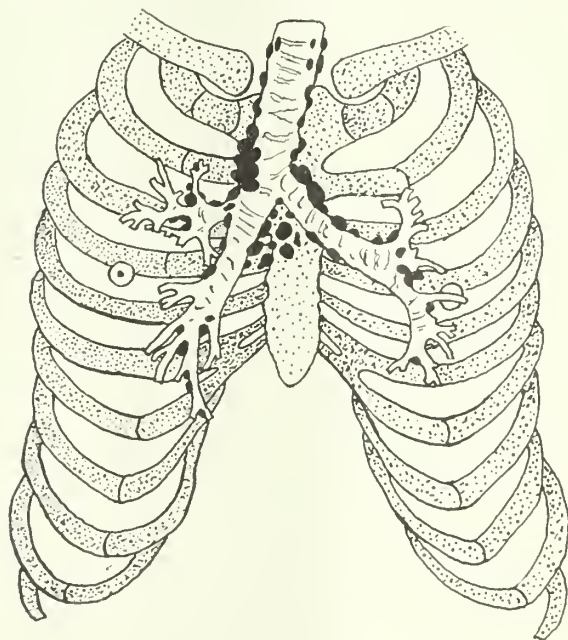
ings. The trachea is relatively larger, as are also the bronchi, and occupy relatively greater space, the air cells and parenchymal tissue are smaller in size and amount, whereas the interstitial tissue is more abundant. Certain changes in physical findings are thus accounted for. Dullness to the left of the upper sternum may partly be due to the presence of the thymus but is also partly due to the fact that the trachea is separated from the pulmonary apices by the aorta, carotid and subclavian arteries and esophagus. There is also normally a larger amount of lymphoid tissue present during early childhood.

Diagrams I and II show the anatomical relations of the glands anteriorly and posteriorly. It is seen how much variation in physical signs could result from the enlargement of the various groups. There are three main sets of bronchial glands, first the glands that accompany the bronchi and trachea. These may be divided into two groups: first the tracheo-bronchial glands, on the right and left of the tracheal angle, surrounding the trachea, the superior vena cava, the pneumogastric and recurrent laryngeal nerves; and second, the glands at the bifurcation of the principal bronchi. These are also in contact with the pneumo-gastric and with the pericardium anteriorly, the esophagus posteriorly, the pulmonary vessels lying below. The second group of glands are termed the pulmonary glands. These may be divided into two groups: first the bronchial pulmonary which lie at the division of the collateral bronchi into the lateral branches of the bronchi. These glands lie outside of the lungs and in contact with the bronchial and pulmonary vessels. The second group lie at the angle of the division of the small bronchi. These lie within the lungs. The third group, the hilus glands, are made up of the glands to the right and left of the tracheo-bronchial angle and of the glands in this neighborhood. This group probably plays the most important role in the primary infection of bronchial gland tuberculosis in children. It is a well known fact that these glands stay in the lymphoid state for a shorter period than do the cervical or mesenteric glands. Why they caseate sooner than these other two systems of glands, is not known. Normally these bronchial glands are not enlarged, nor visible any more than are the cervical. There is no constant way in which they become enlarged. Diagram III illustrates the way in which the bronchial glands extend out along the smaller bronchi, and their irregular enlargement would give, of course, various physical findings. The difficulty of interpretation would depend entirely on the situation of the enlarged glands in relation to other anatomical structures. Sometimes one chain of bronchial glands seems to be the focus of primary involvement and in others another chain. For this reason the findings vary in different cases. The areas involved are different, which accounts for the difference in physical findings. For instance, at times the area of dullness is triangular in shape with its base towards the median line, having its apex reaching into the pulmonary field. However, it is not

always triangular in shape. It is often crescentic or semi-circular, with its convexity either upward or downward. At times the areas are very irregular. The broadest area of involvements usually between the fifth and the ninth dorsal vertebrae, and in this case is more often crescentic in shape, the horns of the crescent reaching up into the apices and down into the bases. Sometimes the upper involvement is more extensive than the lower.

The physical findings are naturally very much harder to interpret on the left, where the bronchial glands are behind the heart and blood vessels, than on the right. Physical findings anteriorly are often difficult to elicit and on the left especially are often confusing. This is especially true in the region of the thymus. The left lobe of the thymus ordinarily reaches out during the first few years of life to one cm. beyond the para-sternal line. Below it often merges with the cardiac dullness and the resonant lip between the thymus and the heart may be absent from either the high position of the heart or from the position of the vessels or from the thymus.

The heart, on account of its more horizontal position, is higher than in adult life and is also more variable in its position, while the vessels are shorter and broader. On the X-ray plate the heart and vessels and thymus assume somewhat



No. I.

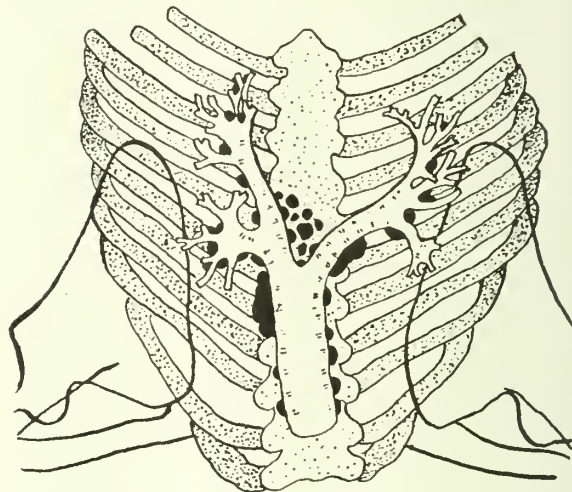
the appearance of a flask, the heart being the body of the flask and the blood vessels the neck and the thymus the mouth of the flask. See Diagram IV. Diagram IV illustrates the position of the heart, blood vessels and thymus in the chest, in relation with the chain of larger bronchial glands. It can be easily imagined how variation in the position, not only of the heart and vessels, but also of the patient, might change or vary the physical findings so as to make interpretation difficult. This shadow is mainly on the left in the area of the heart and somewhat more to

the right in the area of the vessels, with again an eccentric left position of the mouth of the flask which is the thymus. On account of the variable position of the heart and the vessels, the exact shadow in the X-ray varies considerably, and this variation is increased if care is not taken with the position which the chest assumes when the picture is taken.

With these anatomical findings in mind it is not to be wondered at that our physical findings are often confusing and that with glands undoubtedly present we often get no physical findings, so that in the consideration of any case it becomes important first of all to study the history of exposure. The importance of the history of exposure is especially true in children under five, as it is during these first years that we see most of the cases of acute tuberculosis. In the chronic glandular type which we are discussing, it is often not easy to determine the source of infection. It has, however, been clearly shown that gland involvement is almost always present in children where one or more of the family are tuberculous, even though there are no clinical manifestations. Clinical manifestations are also usually very indefinite. They are usually only definite in the acute types. The personal history of these subacute and chronic cases is significant in its indefiniteness. Among the earlier symptoms which I have come to place reliance on, are changes in the nervous system, increased irritability, change in disposition, fits of moderate temper or crying for no obvious or sufficient cause; they tire easily; are apt to be tired in the mornings even more than in the afternoons; they show an indefinite languor which is sooner or later followed by loss of appetite which may be very capricious. They evidence stronger likes and dislikes than they were want to. They may or may not have slight attacks of indigestion. Very uniform is the lack or loss of tissue turgor. Their muscles are flabby and though they may not show marked loss in weight, their weight curve is usually quite fluctuant with the trend downward. Pallor is a general finding though this is usually associated with rapid vasomotor changes, shown by rapid flushing and paling of the cheeks. Tendency to cold hands and feet, which in a short time may be quite warm. Sweating around the head may or may not be present. Sweating under the arm pits is not infrequently found during the examinations. They complain often of indefinite pains. These may be located in the abdomen or in the interscapular region. Their temperature chart is often very irregular, tends as often to be subnormal as it does to be above normal. The rise in temperature is often in the morning, coincident with the time when they show the greatest fatigue, and will be down in the afternoon, when apparently from the stimulation of exercise their temperature equilibrium is also better regulated. There may or may not be a previous history of infectious diseases. Among the most important are tonsil trouble, pharyngitis, repeated colds, measles and pertussis, especially if they have been accompanied with infections of the upper respira-

tory tract, as bronchitis. In fact, anything that has lowered the resistance of the individual and has caused a local infection of the bronchial glands appears to be important in the etiology of a subsequent tuberculous infection. Whether the result after such a tuberculous infection is rapid or slow, depends primarily upon the number of organisms introduced. It is a question whether the body is able to accommodate itself to the number of organisms introduced. If the number of organisms introduced is large, the resisting power of the individual is rapidly overcome and acute tuberculosis follows. If, however, as is most often the case, the number introduced is small, there occurs a slow sensitization of the body to the tubercle infection.

The physical examination, as has been noted,



No. II.

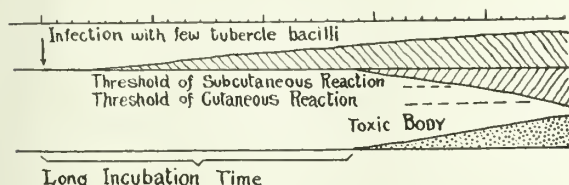
is often entirely negative. On inspection there is usually nothing to be seen beyond what is found in any child that is somewhat below normal. Percussion usually shows in the cases, where there are positive findings, anteriorly slight dullness to the right or left of the sternum. This, however, is often confused with thymus dullness and is almost impossible to differentiate unless, on auscultation, there are also changes in breath sounds accompanied, in the more advanced cases, with fine rales. Posteriorly the findings are mainly in the interscapular region. There may be pain on pressure over the region of the glands. I have found that interscapular resistance to direct palpation and percussion are the most satisfactory means, outside of auscultation, to demonstrate the presence of these glands. The percussion must be light, otherwise the waves are carried through the glands and we simply get the resonance of the lungs beneath. Often there is simply a feeling of resistance rather than any demonstrable change in percussion sound. It is well to carry the percussion both from above downward and from below upward, going from the center out as well as from the periphery in.

That the strength of the percussion is a very important point in the demonstration of glands, depends on the fact that such small objects as glands do not stop the harder percussion waves. The harder waves radiate out very much in the

shape of a truncated cone with the apex on the surface and the base in the chest. The lighter the percussion, the smaller will be the radiation and the nearer the base to the area of the glands. The harder the percussion the deeper the cone and the wider the base.

Auscultation is a very valuable means of demonstrating the presence of pulmonary glands. There is first of all a diminution in the pulmonary murmurs, the breathing is harsher and higher pitched, at times it is even bronchial. Bronchophony is increased. It is normally present to the third or fourth dorsal vertebra. Its presence laterally is an important finding, below the fourth interspace. In extreme cases it may be heard as low as the tenth interspace.

In examining the X-ray findings of the chest,



No. V.

one must consider the position of the trachea, the bronchi, and the median shadow, in relation to the glands. See Diagram IV. The bronchi and trachea lie entirely within the flask-shaped median shadow. The left principal bronchus reaches much nearer the clear pulmonary field than does the right. The bronchi run parallel with the borders of the cardiac shadow. The right principal bronchus passes over the right auricle then turns outward, and then downward, running parallel with the right cardiac shadow, but outside of it. On the left it always remains within the heart shadow. The left hilus is covered by the heart shadow and therefore can very rarely, if ever, be made out. The right hilus, however, lies just outside the median shadow, usually at the level of the fifth rib with the spine. The left is normally one interspace lower, or at the level of the sixth rib with the spine. In interpreting shadows in the radiograph we must hold in mind their topographical position, otherwise grave sources of error may arise. It must be remembered that the median shadow is often indefinite or irregular and varying in size and shape. Enlarged bronchial glands often fall within the area of the median shadow, and in such cases are not seen, and therefore often lead us to distrust our physical findings. Where infiltration of the bronchi exists or the glands outside the median shadow are enlarged, the radiographic picture is characteristic. We can discern in main three large types of involvement: First, those in which the glands, some or all of the groups, are enlarged. A second type in which besides the glandular enlargement there is a peribronchial infiltration, which corresponds with the second stage of tuberculosis, and this is the form most often met with in cases showing indefinite clinical symptoms. The third type shows the progress of the condition into the parenchyma which gives a very mottled, diffuse, indistinct appearance to the X-ray picture.

Often the appearance of blood vessels and the bronchi are mistaken for glands or peribronchial infiltration.

The tuberculin reaction is of great value in interpreting the physical findings and the X-ray picture, though it must be taken in conjunction with these other findings, rather than alone. There can be no question that the positive reaction indicates the presence of some tuberculous focus, but the problem always is how much weight to put on such findings. Often the case must be studied for quite a long period before a definite estimate should be made. The reaction simply indicates the sensitization of the body to the specific protein of the tubercle bacillus and the interpretation of this sensitization is the important point. A negative reaction may mean one of three things: First, that the threshold of sensitization is below that of the clinical manifestation from the ordinary tuberculin skin test. In such a case the sensitization could be increased by the interdermal or subcutaneous test, which in all suspicious cases where diagnosis can not be completed satisfactorily without this test, should be tried. Second, a negative reaction might indicate that the power to respond to sensitization was so diminished by an active process that there was no reaction to the skin test. In such cases the subcutaneous test is often carried out not without danger. The third indication which a negative reaction shows is the absence of any tuberculous infection.

Von Pirquet has demonstrated in graphic form very clearly the first two of these possibilities. See Diagrams V, VI, and VII; Von Pirquet's explanation is as follows:

*. . . "Roemer's experiments with tuberculosis show that the antibody formation can occur very late after an infection with few or with attenuated germs (Fig. V). In these cases the human organism is able to resist the infection and to overcome it in time. Clinical facts to which I allude are the bronchial infections of older children and Figure VI explains the train of events. In this figure the time is marked in months instead of days. The antibody, although slowly formed, preceded the growth of large masses of tubercle bacilli and so is able to overwhelm them. After some time the allergen begins to decrease; that means that the bacilli are localized. A very small amount of toxic body is produced; the clinical symptoms hardly reach the threshold of manifestation. After several months practically no more allergen is present in the organism; the antibodies, however, are present for a much longer time and decrease only slowly.

"We can distinguish several periods in this type of weak tuberculous infection. During the first weeks (a to b in Fig VI) tubercle bacilli are slowly growing with no clinical reaction. This is a period in which tubercle bacilli may be found only microscopically, or by injection of the tissues in animals (Bartel's lymphatic state). Between b and c the antibodies slowly increase just as the tuberculous process does, but the formation of toxin is a slight one, so that the general symptoms do not reach the threshold of clinical manifestation. Between c and d the struggle is at its height, leading for some time to general symptoms, such as loss of appetite, anemia, fever, but is terminated by the successful fight of the antibodies against the bacilli. In the period d to e therefore the allergen, i. e., the tubercle bacillus, does not play any role in the general system, but the

does not overwhelm the body and that in the great majority of cases immunization keeps ahead of infection, and unless some acute intercurrent infection appears during this process of immunization, such as measles and pertussis, which lowers the resistance of the child, we do not hear from these early infections until later, the first sign often being in early adolescence or early adult life when the strain put on the whole system increases to such a marked degree that their general tolerance is lowered. We usually find these late cases appearing where the nervous or physical system has been overtaxed, though, of course, this does not hold true in all such cases.

Besides age, in forming our prognosis, we must consider certain other factors, such as gain in weight. This, however, is not prognostic in all cases, as I have had occasion this past winter to follow several cases which increased in weight quite satisfactorily, but whose glandular involvement also increased. Temperature also is of prognostic value. In nervous children, however, it must not be considered as important as it is in adult life, as we not uncommonly find this group of children running irregular temperatures without any immediate cause or with cause which we only find later. A morning temperature is often more valuable in prognosis than an afternoon temperature. The condition of general muscle tone, the condition of the heart, and vaso-motor system, must be carefully considered. The appetite is often variable, though this in itself is certainly no definite sign. Sweats we know occur in children very much more easily than they do in adults. Very many children under par, sweat at night quite profusely. The physical findings, as I have said, are very variable, as I have outlined in the following chart of the Symptoms Complex of Tuberculosis in Children:

SYMPTOMS COMPLEX OF TUBERCULOSIS IN CHILDREN.

History

Exposure in home.
Exposure to infected milk.

Previous Illness.

Adenitis.
Tonsils and Adenoids.
Bronchitis.
Whooping cough.
Measles.
Pott's Disease, etc.

Symptoms.

Loss of weight or failure to gain consistently.
No appetite . . . Listlessness.
Cough . . . Night Sweats.

Examination.

Irregular temperature99 and upwards
Constantly elevated pulse100 and upwards
Pallor.

Lungs—Signs at apex or base of Enlarged Glands
Increased vocal or tactile fremitus.

Or—Broncho-Vesicular breathing.

Limited Expansion.

Persistence of fine rales over limited area for several weeks.

Bronchial Glands.

Giving persistent signs for several months

As { D'Espines sign.
Paravertebral dullness.
Vertebral dullness and resistance.
Enlarged Thoracic Veins.

Positive X-ray Examination.

Positive Tuberculin Test.

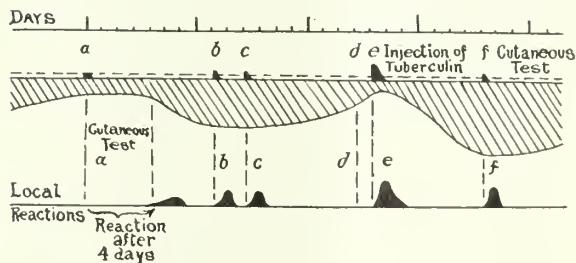
Positive Sputum (only in advanced cases).

(In the above outline chronic endocarditis and glandular enlargement after measles and pertussis should be excluded unless persisting for several months.)

When we find symptoms of constant loss in weight or failure to gain consistently, little or no appetite, listlessness, easy fatigue with cough and night sweats, and find in our physical examination an irregular temperature, a constantly elevated pulse of over 100, pallor with vaso-motor disturbances, physical findings in the lungs, with signs at either the apex or base of increased vocal or tactile fremitus, or broncho-vesicular breathing, with or without limited expansion, and the persistence of these signs with fine rales over a limited area for several weeks, we must be suspicious of tuberculosis. When the bronchial glands alone are involved we may only get the persistence over several months of D'Espines sign, para-vertebral dullness, or vertebral dullness and resistance, and perhaps enlarged thoracic veins, with an X-ray picture which shows during these months' extension of the glandular process either to other glands or an increase in peribronchial infiltration. With repeated positive tuberculin tests there can be no doubt.

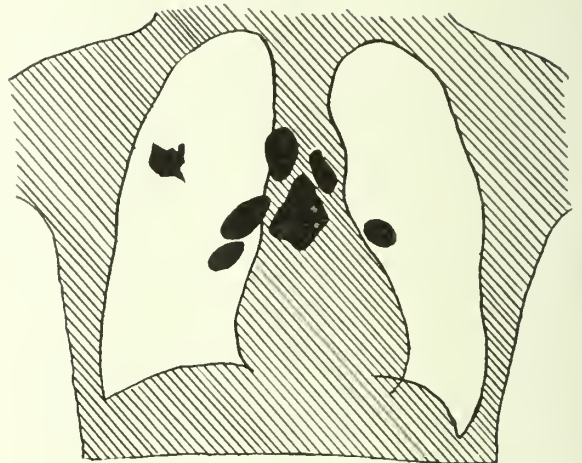
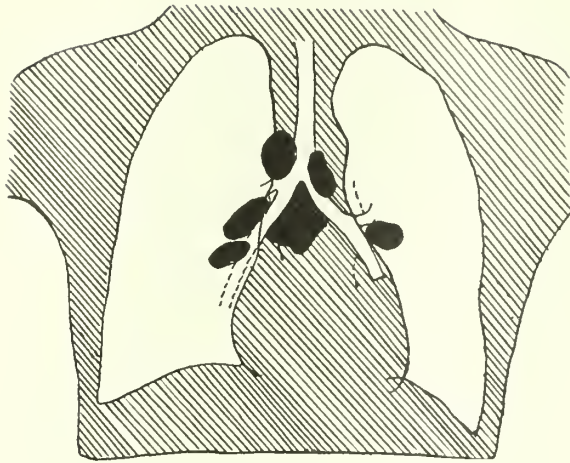
Sputum is often most difficult to obtain. In fact in these chronic glandular involvements tubercle bacilli can only be demonstrated by close microscopic examinations or by animal inoculations of the glands. Microscopic appearance of these glands often shows nothing characteristic of a tuberculous infection, simply showing a hypertrophied gland. So that sputum examination in young children and in children where bronchial gland infections are suspected, cannot even be counted on for diagnostic evidence.

That bronchial glands occur in other conditions



No. VII.

than in tuberculous infections must be conceded, and at times these glands persist for long periods is also certain. I have been able to demonstrate the persistence of these glands in such conditions as chronic intestinal indigestion in infants during the second year and even during the first year, which after months cleared up. The same is true of such infections as rheumatic fever with cardiac involvement. In such cases we get enlargement of the bronchial glands, especially of the hilus group, which may be due either to circulatory conditions, or to the rheumatic infection. We see enlargement of the bronchial glands in a considerable number of the acute infectious diseases and in these infections this primary involvement



is certainly not always tuberculous, as they very often clear up when the acute infection is over, though it often takes months for them to entirely disappear. However, I see no reason for supposing that we may not have bronchial gland involvement the same as we have cervical gland involvements from other causes than the tubercle bacillus. In all such cases the glands disappear and the other symptoms which I feel are necessary to make the diagnosis of tuberculous bronchial adenitis, are absent, or at least not persistent. In such cases, of course, it is impossible to make a diagnosis unless the case is kept under observation. During this period of observation such cases should be treated in an expectant manner. They should have the outdoor treatment just as much as a case which we consider or know to be positive, as they are certainly most fertile ground for tuberculous infection. I believe that it is during these periods that many of such simple bronchial adenitis cases become infected. Besides out-of-doors treatment for all such cases, restriction of activity is an important point to be considered. Recuperation from fatigue in these cases is always longer than in a normal child, and for this very reason during fatigue their resistance is unnecessarily lowered. They should have longer periods of rest and sleep. Their food should be high in calories, keeping their proteid equivalent high. If there is involvement at the same time of intestinal glands, or if there are intestinal symptoms, it has been found advisable to limit the quantity of fat in the diet. A high proteid and carbohydrate diet with a moderate fat diet, I have found most successful in such children.

The question of tuberculin treatment is at present a very much mooted one. It is certainly in the experimental stage of use. It is only a form of medication, not really a form of treatment, and must always, when used, go in combination with the most thoughtfully worked out plan of treatment. However, in the glandular cases, I feel that it has more chance of application than in any other type, for what we want to do is to raise

the resisting power of the individual, to make them more active in their protective power. If tuberculin is to be used, it should be started in very small doses. I usually start with one ten-thousandth of a mg. and then if there are no local reactions in the gland, no rise in temperature, gradually increase the dose by weekly or bi-weekly injections until the child is taking one-tenth of a mg. It is very rarely possible to go above this dose in young children. There are various forms of tuberculin available for use. Dilutions of Koch's old tuberculin is perhaps most generally used. A form of tuberculin which is now being used a good deal in children is Rosenbach's tuberculin, which is tuberculin formed from tubercle bacilli, which have been grown with trichophyton. This form of symbiosis is supposed to modify in some way the toxic property of the tubercle and not change its anti-genic property, which is the property of producing anti-bodies to the tuberculin toxin. Vaughan suggests that what we need is a specific tubercle protein sensitizer, and he and Wheeler have been attempting to produce such a vaccine, but so far have not been able to produce a uniform product. However, from Vaughan's work it seems that when he is able to produce a uniform specific protein sensitizer for the tubercle bacillus, that we will have the most ideal method of actively protecting against tubercle infections. However, until that time we must use all hygienic and preventive measures possible. This in any community can only be done by an intelligent study of the cases, the co-operation of physicians with institutions, and careful home treatment. Certainly it is only in the prophylactic and preventive measures that we can hope to stamp out tuberculosis, which is not only on the increase among our cattle in this state, but is also on the increase in our human population, which should be of vastly more importance to us.

I have been unable to find any definite statistics as to the prevalence of tuberculosis of children in this state. The need, however, for such a study is perfectly clear in my mind from the short con-

Table No. IX, Showing the Analysis of 122 Case Histories from the University of California Hospital and Out-Patient Department, Classified by the Following Diagnoses:

*Diseases of Respiratory System.....	69
Tonsils and Adenoids.....	12
Tuberculosis	10
Intestinal Diseases	11
Mentally Deficient	5
**Miscellaneous	15
	122

* Bronchitis, broncho-pneumonia, adenopathy, cervical adenitis, pharyngitis.
**Chorea, scorbutus, rickets, measles, endocarditis, pertussis, pseudo-leukemia, typhoid, epilepsy, empyema.

Positive Findings from Lungs and Glands.							
	Inspection	Palpation	Percussion	Auscultation	Acenopathy		
					Cervical	Axillary	Inguinal
Total No. findings	16	3	75	101	83	31	37
% of 122 cases	13.93	2.45	61.47	82.78	68.03	25.40	30.32

Tuberculosis Findings—49			
	Pos. VonP.	Negative VonP.	No test made
Number	35	14	73 or 59.8% of 122 cases
% of 49 taken	71.42	28.57	

X-Ray Pictures—40.	
	Positive Gland Enlargement
Number	33
% of total (40)	82.5
(Of 122 records, only 40 (32.78%) had X-Ray pictures.)	

Wassermann Findings.		
Positive	Negative	None taken
0	17	105

tact which I have had with the children of San Francisco.

The following table (Table No. IX), which is a study of 122 cases at the University of California Hospital, shows the prevalence of tuberculous bronchial gland involvement. The table, I think, speaks for itself. Certainly I have not enough data, nor do I think exact data exists in this state, to draw any definite conclusions as to local conditions. I hope in the future to be able to have some definite figures both for city and state prevalence of tuberculosis in children.

X-Ray Findings from Hospital Cases.

No. 6613. E. C. Child in the hospital for two months as a feeding case. Diagnosis, chronic intestinal indigestion. Child five months old. During the period while she was in the hospital, as seen by the three X-rays, she had several attacks of bronchitis, which is a very common occurrence in such cases. Tuberculin test entirely negative. She ran no temperature and condition in her lungs could certainly not be called tuberculous. This series illustrates a type of glandular involvement in the chest which is due to recurrent bronchitis, which in itself is dependent on the lowered condition of the child due to metabolic state.

No. 6461. F. G. Four years old. This series illustrates type of bronchial gland adenitis which is undoubtedly of tuberculous origin. The child had intercurrent bronchial trouble for a period of over a year, had lost in weight and had had some digestive trouble, at one time becoming so acute that she was operated on for her appendix. Appendix found normal. She ran a constant temper-

ature from 99° to 101°, had a slight cough at times, night sweats, even under the best hygienic conditions, before treatment was begun.

The first of the series was taken in November, 1913, the last in March. During this period she was under constant observation and treatment. She gained in weight, temperature became practically normal, though the glandular condition has progressed. No alveolar infiltration and with continued treatment and constant observation, prognosis at this age should be good, unless there is parenchymal involvement from a breaking down of the glands, or peribronchial infiltration. Her physical examination shows a well-developed girl of four years. Her chest is slightly asymmetrical, the right side being flatter and broader than the left. Interscapular dullness with a few rales at both bases. Both apices slightly more resistant than normal. There is increased bronchophony throughout the interscapular region as far as the seventh dorsal interspace.

No. 6856. G. B. Age eleven years. Child in the hospital during January and February. Entered as lobar pneumonia. This involvement is seen distinctly in the first plate in the region of the lower left lobe, but it is partly hidden by the heart, but is seen to radiate downward. Also small irregular areas of consolidation in the right interscapular region. Bronchial-tracheal glands seen enlarged throughout. The glandular involvement is seen better in the second plate. The tuberculin reaction was very slow in developing. It did not reach its maximum until the fifth day, then measured 9 mm. and was somewhat raised, but was not vesicular.

This series illustrates a condition which should be kept under observation for a long period without making definite diagnosis of active tuberculosis. The child having had such a diffuse pneumonic process, and with so many tracheal-bronchial glands involved, is, to say the least, good ground for tuberculous infection, and as there is a positive tuberculous reaction, it shows that there is already a latent infection. The age, which is just before the adolescent period, in this girl would indicate also the need of more careful supervision. In a case like this positive diagnosis cannot be made, but the case should be treated with a long convalescence going over a period of at least two or three months, until we are absolutely sure that the glands are quiescent and there is no chance of any extension.

Physical examination in this case showed very diffuse bronchial pneumonia, slight involvement in both apices, the largest area being in the left lower back, but also some involvement in the right lower lobe, with very marked general diffuse signs of bronchial gland involvement, increased interscapular dullness, and vocal fremitus. Temperature in this case, after the crisis, continued sub-normal.

Late note: This case has been followed for a number of months in the O. P. D. The chest condition has been clearing up. She has gained in weight and is not running any temperature. It would be safe now (June) to say that she is not an active tuberculous case at the present time, though I feel sure she would have been if she had not had a long convalescence.

No. 6588. W. O. Nine years old. Admitted to the hospital with an acute intestinal indigestion. Gave a history of chronic intestinal trouble for a number of years. His acute intestinal indigestion was of only very short duration before he was admitted to the hospital. That cleared up very rapidly. The examination of his lungs showed that the right side was slightly larger than the left and that there was considerable interscapular dullness and increased vocal fremitus down to the sixth dorsal interspace. There was slight sinus arrhythmia. Von Pirquet was markedly positive to both human and bovine. The X-ray shows marked involvement

of the bronchial tracheal glands radiating both to the apices and bases, and considerable peribronchial infiltration. It is safe to make a diagnosis of bronchial gland adenitis in this case, but not safe to make a diagnosis of active bronchial gland tuberculosis. Such a case should be kept under observation, weight, temperature, and general reaction to daily life kept close watch of. In this case this was done in the O. P. D. after he left the hospital, and after a convalescence and careful watching of now over six months, he is in very much better condition, and from physical examination, signs of bronchial glands in his chest are considerably less.

No. 6631. M. R. Age 13. Two plates of this case give illustration of a case which undoubtedly started as bronchial gland adenitis and which has spread to a parenchymal involvement which is best seen in the right apex. Enlarged glands and peribronchial infiltration on both sides, radiating to bases and apices, with a marked focus in the right apex. This case has lately developed tuberculosis of the kidney. There can be very little question that the starting point in her present disseminated general tuberculous condition is primarily due to bronchial gland involvement.

No. —. A. T. This series of two plates illustrates findings in a child seven years old in a family in which the mother and father both have had tuberculosis, though are now supposed to be in the quiescent stage. Five other children, the youngest 18 months, the oldest 14 years. They all show varying degrees of bronchial gland involvement. This child was chosen because he is the middle child and gives the average of the family very well.

Physically he is somewhat below par, is running no temperature, going to school regularly and doing well, and except for the fact that he comes from a tuberculous family, would not probably have been sent in for complete medical examination. His physical examination showed nothing but moderate interscapular dullness, increased bronchophony down to the fifth dorsal interspace. His tuberculin was very strongly positive to both human and bovine. X-ray shows enlarged tracheal-bronchial glands radiating into both bases and apices with peribronchial infiltration. Such a case unquestionably should be treated as a tubercular case, even though he does not show any general symptoms that would indicate any active process going on at the present time. Unless this is done there is very little doubt that during adolescence, if not before, he would develop general pulmonary tuberculosis. At least no one can gainsay that this is the time for preventive treatment in his case, and such a case should be under the strictest observation and routine guidance.

No. 1168. P. B. This series of pictures taken from January to April shows another typical bronchial gland adenitis case which is unquestionably tubercular in origin. In this case it is probably a bovine infection. The boy is three years old, has always been well, active, and lived under the best hygienic conditions. He has not had certified milk to drink. There seems to be no other source of infection. He gives a strong tuberculin skin reaction, stronger for bovine than human, runs a constant temperature between 99° and 101°. During the last three months he has lost ten pounds in weight, has been having night sweats and become very irritable.

Physical examination shows a very well developed boy with slight signs of loss of weight and flabby musculature. Enlarged tonsils and adenoids with very slight interscapular dullness and very slightly increased bronchophony to the third dorsal interspace. This series of X-ray pictures shows how the glands progress during four months of active treatment. During this period his tonsils were removed. His temperature became very much less, and the last picture shows child after an at-

tack of whooping cough which apparently did not affect him as seriously as might have been expected.

A case like this must be kept under close observation and careful outdoor treatment given until there is no further loss in weight, and temperature becomes more constant and pulse less rapid.

* From Allergy, by C. E. Von Pirquet. Arch. of Int. Med., Vol. VII, 1911.

INDICATION FOR THE LABYRINTH OPERATION, WITH REPORT OF EIGHT CASES THAT WERE NOT OPERATED UPON.*

By CULLEN F. WELTY, M. D., San Francisco.

In this series of operated cases, my indications for operative procedure were based upon the Vienna school of otology, headed by Docent Neumann, Alexander, Frey, Barrany and Ruttin.

At this time, under certain conditions a labyrinth operation was recommended when the acoustic or static apparatus were intact; many operations were done in such cases and usually with good results. About two years ago the attitude seemed to change in regard to the operative indications and at present the entire labyrinth must be destroyed before the operation is indicated.

In my series of eight cases, a few had complete destruction of the labyrinth, and four had only the static labyrinth destroyed. In one case the horizontal canal was opened from the fistulae to the vestibule and the cochlea broken off; all the others had the complete Neumann operation. No cases of facial paralysis; all recovered. No other complications. It seems to me the non-operated cases assume more importance, because they were cases that should have been operated, were you to accept either classification for operative procedure.

Case I. Female; age 21 years. Had ordinary diseases of childhood. Had acute suppurative otitis following scarlet fever at the age of eight. The discharge continued uninterruptedly for two years. Adenoids were removed and drops used in the ear, which remained perfectly dry for one year. Since that time, the ear has discharged more or less. Examination: Weber in the good ear. Schwabach somewhat shortened. Rinne, right ear, positive. Slightly shortened bone conduction. Rinne, left ear, negative; considerably shortened bone conduction; very much shortened air conduction. Right ear, whisper 25 feet. Left ear, whisper on contact. Acoumeter on contact. Right ear apparently normal. Left ear, caries of the attic wall with a fissure extending into the same. Some granulations above this fissure with a tendency to bleed on manipulation with a probe.

January 19, 1905. Radical Operation. Closing by Korner flap. Posterior wound healed by primary union. On removing the periosteum from the mastoid the bone showed a dark blue color. This was produced by the carious necrotic mass of the mastoid cells. The outside shell of bone was more porous than under normal conditions. The hammer and incus were almost destroyed by caries. There was a fistula posteriorly and below the facial nerve. However, it was curetted as well as possible by the use of straight and curved curettes. I wish to direct particular attention to this particular lesion, as I consider it wholly responsible for the symptoms that will be recorded later. The wound was dressed every second or third day. The patient complained of so much dizziness, headache and pain on this side of the head that she remained in

* Read before the Pacific Coast Oto-Ophthalmological Society, Portland, July 1, 2 and 3, 1913.

the hospital for 30 days. I attribute some of the headache to a compound astigmatism which was partially relieved by the continuous use of her glasses. While in the recumbent position she was not dizzy. When she assumed the erect position she would become very dizzy and at one time she fell from her chair. This can be accounted for but in two ways; first, that of injury to the semi-circular canals at the time of operation; or second, to an infection which I believe most likely took place by the way of the fistula which I described before.

Twenty-four hours after operation she was reported by the nurse to be delirious. This happened two or three times in the course of as many days. Complained of headache and soreness about this side of the head, which gradually subsided. When she began to walk her gait was that of a person with a fractured pelvis. She is a highly sensitive, hysterical woman, and I attributed part of the cerebral symptoms to her mental condition. The eye background was perfectly normal.

March 27, 1905; the ear absolutely dry, hearing improved.

May, 1905; sero-pus began to discharge from the fistula and continued until September, 1905, at which time I again performed a curettement. This was treated antiseptically until November, 1905, when she was again discharged as cured. Since the recovery from her primary operation she has had no cerebral symptoms of any kind.

March, 1906; complains of intense headache over this side of the head and dizziness a great deal of the time. The whole of the temporal bone on this side was tender to pressure and the slightest percussion would elicit excruciating pain. At this time there was a serous discharge from this fistula, which in the course of two weeks disappeared entirely. The cerebral symptoms continued with acute exacerbations, at times so severe as to require morphine. Her pulse repeatedly reached 50, full and strong. She had some vomiting, which was probably due to morphine. Examination of the eye, negative; physical examination, negative. At repeated consultations operation was recommended by all but one physician, who maintained that it was due to a nervous manifestation.

May 15, 1906; patient entirely well; cerebral symptoms entirely gone.

Diagnosis; serous meningitis. Infection by way of the fistula to the semi-circular canals and the aqueductus vestibuli. This will explain the cerebral symptoms that followed the primary operation as well as the cerebral symptoms that followed in the later infection. During the first infection the cerebral symptoms were scarcely sufficient to warrant further operative procedure, because they seemed to improve almost daily after the second or third day. However, when we are confronted with cerebral symptoms later, and the only possible source of infection is by this fistulous communication, it must be admitted that it was by this route. Furthermore, the patient had an association of cerebral symptoms such as dizziness, headache and localized pain in the affected side, which should always lead you to suspect cerebral complications, especially when all the mastoid cells have been removed. If it is not to-day it will be considered in the near future, conservative surgery to open and explore.

My diagnosis prior to her recovery was different. At this time I thought she had extra-dural abscess or brain abscess, with a decided leaning for an extra-dural abscess of the posterior brain fossa, infection by way of the semi-circular canals and the aqueductus vestibuli. No doubt the infection traveled this route and was a non-bacterial origin. I wish also to call attention to the fact that the fistula which was discovered at the primary operation and which has apparently been responsible for the infection which followed, should have been destroyed entirely at the sacrifice of the facial nerve, to remove all possible source of cerebral

affections to follow. Or should we trust in Providence, as I did in this particular case, and almost lost my patient?

In this particular case the patient made a recovery without operative interference. This was good luck rather than good judgment on the part of the patient, and I am confident that such cases will not often repeat themselves. In conclusion will say that by early operation in cerebral affections you may cut short or eliminate entirely your source of infection, which on the other hand, if allowed to remain, has but one termination, and that is death, with but an occasional exception such as I have illustrated.

As you will note, this case was operated first in 1905. The history is exactly as I have reported the case at that time. To-day we put a different interpretation on the symptoms of which she complained. Following her first operation she had acute purulent inflammation of the labyrinth by way of the fistulous connection. Made recovery. Later she had an acute exacerbation of her then chronic suppurative labyrinthitis and made recovery. At present she has a discharge of pus from the same fistula, and more than likely will not be well until she has the necessary Neumann operation for complete destruction of the labyrinth.

This case dates back eight years; since then we have learned a great deal about labyrinth infection. Some three years ago she did not hear at all. Caloric reaction negative. However, she had no labyrinth symptoms; the fistula continues to discharge pus.

Case II. The patient, a woman aged 20, stenographer, had discharge from the ear since childhood and repeated attacks of facial erysipelas; also repeated attacks of vertigo for several years past.

Examination; no pain or sensitiveness on pressure or percussion; entire destruction of the membrum tympani; small granulations protruding from the attic. Whisper three inches. Weber to opposite ear (marked adhesive process in the other ear). Rinne, negative; C1, positive; C, negative; C4, positive; watch on bone, positive; vertigo, positive; tinnitus, positive; spontaneous nystagmus, negative; caloric reaction, positive; hearing seven-foot tube, whisper positive.

Operative findings; caries of the attic and antrum; dura uncovered the size of two thumb nails. Fistula of the oval window with a blackened margin about it, which demonstrates that it has existed for a long time; a good sized probe was introduced into the fistula. Neumann plastic, grafts in the usual manner and closed.

First day after operation everything satisfactory; second day some vertigo; third day, vertigo, nystagmus to the opposite side, vomited five times. Fourth day, dressing removed; not so much nystagmus, patient vomited twice. Grafts all adherent.

During the four days the patient had no fever; the vertigo and nystagmus disappeared gradually. The patient left the hospital in ten days; well in twenty-eight days.

Observations: My only careful examination of the patient was made nine months prior to operation. From the examination as made at that time the cochlea and canals were intact, so that a radical ear operation would not have been attended with risk to the patient's life; but when I found a fistula, and an old one at that, I felt sure there would be induced an acute exacerbation of the old labyrinth suppuration. However, the patient made an uninterrupted recovery. This patient should have had an operation on the labyrinth at the time of the ear operation or no operation at all.

I relate this case in detail to accentuate the importance of repeated examinations, should the case not be operated within a few days. At the time of examination the patient heard a whisper three inches. Had my labyrinth instruments been accessible I would have destroyed the labyrinth at once; as they were not, I concluded the operation with a

skin-graft. The patient made a good recovery, which can be attributed to good luck rather than to modern otology.

Case III. Female, age 12. Discharge of ear since infancy; frequent attacks of pain back of the ear; frequent attacks of vertigo. This last attack began three days ago. Acute exacerbation of the chronic suppurative otitis media; pain on whole side of head. Such vertigo that when she moved her head, would vomit. She said the pictures jumped on the wall.

Examination: Painful on this side of the head and especially so over the mastoid. Marked nystagmus to the opposite side and to the same side. Nystagmus of the third degree. Meatus swollen to such an extent could not get a clear picture of the membrane. Weber to the good ear. Schwabach short. Watch on bone negative. The hearing test was positive, but not properly made. By the introduction of cold water into the ear we thought the nystagmus was increased. Hot water did not seem to influence it in any way. The following morning a radical ear operation was done.

Operative findings: Large pneumatic mastoid; cholesteatoma; fistula of horizontal canal; facial uncovered just below fistula. Plastic operation completed.

The following day some additional fever. Beginning facial paralysis; headache; second day, semi-comatose; head retracted; neck stiff; meningitis; facial paralysis. Absolutely no hearing. No caloric reaction. Advised immediate labyrinth operation; was not allowed. Patient continued in this condition for a few days and then began to improve. The facial paralysis recovered entirely. The ear continued to discharge; no hearing, no caloric reaction. The rotary test later positive for a destroyed labyrinth. At my first examination I had misinterpreted the findings in regard to hearing and the caloric reaction. According to all the rules of otology this case should have died of a purulent meningitis. The patient has had no ear symptoms since she left the hospital, but the ear continues to discharge.

Case IV. Female, age 24. Acute otitis in both ears for two weeks past, following influenza. For the past four days has had fever of $103\frac{1}{2}^{\circ}$; marked vertigo, nausea and vomiting. Repeated incision of the drum membrane by family physician.

Examination by myself: Patient suffering great pain; temperature $102\frac{1}{2}^{\circ}$. Intense pain back of the head and especially back of either ear; marked nystagmus to either side, more to the right. Would vomit when attempted to move about in bed. Meatus in both sides swollen shut; pus present. I was compelled to return to the city for my instruments to do an immediate operation on both ears.

Operative findings: Large pneumatic mastoid on either side; dura uncovered on either side in my effort to remove all carious bone. Operation completed.

The following day the temperature dropped to about 100° ; not so much vertigo, had not vomited. The following day the temperature continued 101° ; dressing changed and a wet bichloride, 1-3000 substituted. After four days of this wet dressing the temperature was 99° and $99\frac{1}{2}^{\circ}$. Very little vertigo. The dressings were made of dry gauze, and in the course of ten days she was about her room. Discharge from the ears stopped in a very short time following the operation.

Three weeks following the operation the patient said to me that she did not hear; by the tuning fork I could demonstrate that she did not hear. This was verified by long speaking-tube, noise apparatus, etc. Caloric reaction negative. Was free from vertigo in three weeks; the ear continued to discharge for about ten weeks.

Undoubtedly this patient had a purulent labyrinthitis, and for some reason recovered in spite of her doctor. My reason for the neglect of a more thorough examination was because the apparatus

for examination was not about, and I felt that I could not put off operation to make a more thorough examination.

Case V. Male; age 17. Discharge from ears since three years of age following scarlet fever. This illness also destroyed his hearing. This case had the radical ear operation in 1907 on both ears, neither one of which recovered; continued to discharge pus. At this time I was not familiar with the findings of the labyrinth in chronic suppurative otitis in cases of deaf mutes.

Three years later had to have the labyrinth operation on the left ear because of such symptoms that called for immediate operation. This ear is now well and has remained so since the labyrinth operation. The right ear has discharged off and on, say probably four or five times a year for four or six weeks and by treatment with antiseptics he will recover. No hearing at all; caloric reaction positive.

You can readily understand that some of the cases were misinterpreted. Some were overlooked because of lack of the proper way of arriving at a definite conclusion, and others were not subjected to the proper examination because it was almost impossible to make it under existing conditions, and with all this the patients recovered, which is more astounding to me because I believe in the Vienna school of otology and their teachings. At the same time I am more skeptical than I was as to the serious nature of the labyrinth infection, and that meningitis usually goes by the route of the labyrinth.

On the other hand, only two of the six cases are free from discharge and may at any time have such a labyrinth affection or an infection of the meninges by way of the labyrinth as to cause most serious complications on short notice.

The four cases that had remnants of hearing or a slight reaction following the use of cold water are all cured and out of danger. This speaks for the more thorough operation.

I am of the opinion that the pendulum will swing back again and include as labyrinth operations such cases that have only remnants of hearing on the one side, and no caloric reaction or vice versa. So long as they remain in the present stage they occupy the same position in surgery as a chronic appendicitis.

Does it not seem obvious that it is rather a dangerous condition to allow? They do not get well of themselves and only progress to a more serious complication as time goes on.

The more I reason with myself the more I am convinced that surgical interference in the cases spoken of will yield the best good for the greatest number.

In regard to my reported cases, they should have died in the light of modern otology; I cannot reconcile myself to the fact that they did not. However, my leanings are strongly to the operative side.

THE INTRASPINOUS TREATMENT OF TABES. PRELIMINARY REPORT.*

By S. J. GARDNER, M. D., W. B. COFFEY, M. D. and W. T. CUMMINS, M. D., San Francisco.

The intraspinoous administration of auto-salvarsanized serum has been carried out on three tabetic cases at the Southern Pacific Hospital with the

* Read before the San Francisco County Medical Society, January 7, 1914.

period of study extending over six months. In general, the technic was that described by Swift and Ellis.** Salvarsan 0.6 gram was intravenously given and one hour afterward 40-50 cc. of blood were withdrawn. Left in the ice-chest over night, the serum was pipetted off, centrifugalized and the requisite amount of physiological salt solution added for the desired percentage. This was heated at 56° C. for one-half hour and inoculated within a period of twenty-four hours after the withdrawal of the blood. A funnel with short rubber tubing and interposed glass tubing were employed in the lumbar injection. Patients were kept in bed until the following day. The temperature, pulse and respiration were noted at two-hour intervals for forty-eight hours after the intravenous administration.

Case I. J. G., age 33 years. Painter, San Francisco. Admitted to hospital July 5, 1913. Family history negative. Denied luetic infection. His

Résumé: The patient has received 4.2 grams of salvarsan and seven intraspinal injections. He shows a clinical improvement with a return to a normal gait and to coördination of the upper extremities. He has gained in weight and feels very well. Serologically, he shows little, if any, improvement, the cerebrospinal fluid still showing a strongly positive Wassermann reaction and positive globulin content.

Case II. F. B. C., age 38 years. Conductor, Portland. Admitted to hospital August 21, 1913. Family history, negative. Denied luetic infection. About a year ago began to notice tingling sensations in the feet and a feeling that the soles of his feet were "dead." He began to note some difficulty in walking on account of frequent stumbling. "Lightning" pains developed in the legs. For past ten days stated that his nose felt "dead." No sensation during urination and defecation, but there was no incontinence. Examination: Well nourished adult. Pupils sluggish to light and accommodation. Enlargement of epitrochlear, inguinal and axillary lymph nodes. Patellar reflexes absent. Marked Romberg. Moderate incoördina-

J. G.—Case I.

Date	W R		Pressure	Globulin		Cells	Type	Intraspinal treatment	Reactions
1913	B S	C S F		Noguchi	Nonne				
July 3	—	++++						30 cc. 40% serum	Severe chill. Shooting pains in knees. Stiff neck.
" 17	—	++						30 cc. 40% serum	Generally not so severe. Severe pains over eyes. Some epigastric pain.
" 31	—	++						30 cc. 40% serum	Some epigastric pain.
Aug. 14	—	+						30 cc. 40% serum	Moderate pains.
" 28	—	+		—	+	10	Lymphocytes	30 cc. 40% serum	" "
Sept. 11	—	+		+	+	9	"	30 cc. 40% serum	" "
" 25	—	++		+	+	14	"	30 cc. 40% serum	" "
Nov. 7	+	++++	140 mm.	+	+	12	"	20 cc. 40% serum	" "
" 29	+	++++	100 mm.	+	+				
1914									
Jan. 3	—	++++	175 mm.	+	+	44	"		

W R=Wassermann Reaction. B S=Blood Serum. C S F=Cerebrospinal Fluid.

complaint was difficulty in walking and vertigo. There had been no pains. Examination: Well developed adult. Pupils showed moderate reaction to light and accommodation. No blue line on gums. Marked Romberg and incoördination of upper and lower extremities. Patellar reflexes absent. No radial sclerosis. Blood pressure: systolic, 120 mm. Urine, normal.

After first three intraspinal injections patient stated that he was feeling much better and that he had less difficulty in walking. On September 25, after five injections it was noted that the patellar reflexes were absent and that the pupils still responded but moderately to light and accommodation. There was apparently the same degree of incoördination of the upper extremities. Gait was normal. On November 7, after six injections patient stated that he felt very well. Examination showed no further improvement. Inunctions of mercury were begun on January 8. Examination on January 9 showed no apparent incoördination of upper and lower extremities. Station very good. Tactile sensations normal.

tion of upper extremities. Gait typically tabetic. Ulnar anesthesia both arms. Blood pressure: systolic, 100 mm. Urine, normal.

After the fourth intraspinal injection there was some improvement in his gait. He said that he felt better. Two days after the fifth injection, October 23, he stated that he had more sensation in the feet and that he found walking somewhat easier. There was more sensation during urination and defecation. The anesthesia on the ulnar side of both arms had disappeared. Patellar reflexes could not be elicited and Romberg was marked. There was no increased reaction of pupils. Patient left for his home in Portland two days following the sixth injection (November 6) in the above condition. He has not been seen since that time but we have received letters from him stating that he is feeling pretty well and that his gait has improved.

Résumé: The patient has received 3.6 grams of salvarsan and six intraspinal injections. When last seen—three months ago, he had gained in weight, his gait had somewhat improved, his anes-

F. B. C.—Case II.

Date	W R		Pressure	Globulin		Cells	Type	Intraspinal treatment	Reactions.
1913	B S	C S F		Noguchi	Nonne				
Aug. 23	—	++++						30 cc. 40% serum	Sharp shooting pains to feet.
" 26	—	++						30 cc. 40% serum	" " " "
Sept. 9	—	++						30 cc. 40% serum	Most severe.
" 23	—	++	125 mm.	+	+	18	Lymphocytes	30 cc. 40% serum	Very mild.
Oct. 7	++	++	125 mm.	++	+	22	"	30 cc. 40% serum	" "
" 21	—	—	180 mm.	+	+	22	"	30 cc. 40% serum	Diarrhea after each "606."
Nov. 4	—	—	190 mm.	+	+	40	"	30 cc. 40% serum	

Pupils moderately dilated and responded but little to light and accommodation. Patellar reflexes absent.

thesia of the arms had disappeared and the paresthesias of the feet were not so marked. He, therefore, showed some clinical improvement. An originally strongly positive fluid Wassermann was reduced to a doubtful (+—) reaction while the chemical and cytological results showed no betterment. There appears to have been some serological improvement.

** Swift and Ellis. The Treatment of Syphilitic Affections of the Central Nervous System with Especial Reference to the Use of Intraspinal Injections. Arch. of Int. Med., 1913, XII, No. 3, p. 331.

M. C. G.—Case III.

Date	WR		Pressure	Globulin		Cells	Type	Intraspinal treatment	Reactions
1912	BS	CSF		Noguchi	Nonne				
Aug. 29	—	—							
1913									
June 10	++	+++							Headache. Pains and stiffness in cervical regions and thighs.
" 20	—	+++						30 cc. 40% serum	Headache. Pains and stiffness in cervical regions and thighs.
July 3	—	+++						12.5 cc. 40% serum	Headache. Pains and stiffness in cervical regions and thighs.
" 17	+	+++						30 cc. 40% serum	Headache. Pains and stiffness in cervical regions and thighs.
" 31	—	+						30 cc. 40% serum	Headache. Pains and stiffness in cervical regions and thighs.
Aug. 14	—	++						30 cc. 40% serum	Headache. Pains and stiffness in cervical regions and thighs.
" 28	—	++		++	++	30	Lymphocytes	30 cc. 40% serum	Headache. Pains and stiffness in cervical regions and thighs.
Sept. 12	—	++	125 mm.	++	++	9	"	30 cc. 60% serum	Headache. Pains and stiffness in cervical regions and thighs. (severest.)
" 25	—	++	125 mm.	++	++	9	"		
Oct. 30	—	++							
Nov. 25	—	+++	250 mm.	++	++	50	"	30 cc. 40% serum	Headache. Pains and stiffness in cervical regions and thighs.
1914									
Jan. 13	—	+++	300 mm.	+	+	7	"		

Case III. M. C. G., age 55 years. Laborer, Sacramento. Admitted to hospital June 6, 1913. Family history negative. Alcohol and tobacco moderately. Genital chancre twenty-six years ago. Thermal treatment at Hot Springs, Ark., for two months and then a course of medicinal treatment for six weeks. No history of secondaries. Thirteen years ago fell upon pile of iron, striking abdomen, after which accident there were severe abdominal pains, some tenderness and more or less constipation, lasting to the present time. In August 1912 operated upon for a suspected gastric ulcer, which was not found. Temporary relief, however, was obtained. Present condition: Attacks of "lightning" pains in epigastrium radiating to the back. These appear every two or three days. Occasional sharp stabbing pains in middle and sides of chest. No girdle sensations. Numbness and needle-like pains in feet. Examination: Poorly nourished man. Pupils contracted and immobile. Thorax negative. Deep epigastric palpation elicited tenderness. Inguinal lymph nodes moderately enlarged. Patellar and tendo-achilles reflexes absent. Moderate incoordination of upper and lower extremities. Slight Romberg. Tactile anesthesia noted over upper, outer half of both thighs and lower two-thirds of both legs. There was everywhere a relative analgesia. No change noted in thermal sensations. Vision and eye-grounds normal. Blood pressure: systolic, 190 mm.—diastolic, 110 mm. Urine, normal. Feces, no occult blood.

A few days after the second intraspinal injection there appeared a slight left patellar reflex. The "lightning" epigastric pains became somewhat less severe after the first injection and then slightly but progressively decreased after the second, third and fourth injections. During this period the pupils gave slight response to light. The paresthesias of the feet persisted but walking seemed to improve. The patient stated that he was feeling better than he had felt for years. Urine, August 18 and September 26, normal.

On October 23, after seven intraspinal injections had been given it was noted that the epigastric pains persisted but were of a dull, aching character, present at night only and were always accompanied by nausea. Pupils contracted and immobile. Same degree of incoordination of upper and lower extremities and Romberg as at first examination. The areas of tactile anesthesia over thighs and legs had disappeared.

On October 31, and on alternate days thereafter, for twelve doses, mercacodol was given intramuscularly. The eighth intraspinal injection was given on November 25. On December 11 treatment with mercurous iodide in one-half grain doses was instituted but on January 5 a mixture

of mercuric chloride, Fowler's solution and potassium iodide was substituted. For the past three months he has suffered with a severe cold and has complained of general muscular, epigastric and inguinal pains.

Notes of January 12: For past two weeks the "lightning" epigastric and inguinal pains have been present though not so severe. At times he complains of considerable difficulty in walking, owing to the loss of feeling and needle-like pains in feet. Appetite very poor. Bowels constive and require routine purgation. Moderate Romberg and moderate incoordination of upper and lower extremities. Pupils markedly contracted and unresponsive to light and accommodation. Patellar and tendo-achilles reflexes absent. Tactile and thermal sensations normal. On January 23 a left patellar reflex was elicited.

Résumé: The patient has received 4.8 grams of salvarsan and eight intraspinal injections, twelve mercacodol treatments, followed by mercurous iodide for a period of a little over three weeks. Some improvement has been noted in the amelioration of the pains, the disappearance of the areas of tactile anesthesia and the reappearance of the patellar reflex. Serologically, there has been no improvement.

General Résumé: Case I presented symptoms of early tabes, while Cases II and III were more advanced. Case I has shown decided clinical improvement; Case II, moderate improvement; Case III, slight improvement. Serologically, Cases I and III have shown no improvement, while Case II has shown some improvement from the Wassermann but none from the globulin nor cytologic viewpoints. The resistance to medication as manifested by the examinations of the cerebrospinal fluids may be the expression of insufficient intraspinal treatment or of the necessity for vigorous mercurial treatment with or supplementing the salvarsan medication. Sufficient symptomatic improvement has been experienced as to justify our continuation of this method of tabetic treatment.

Note: April 27, 1914. Case I. For past three months intermittently he has been getting inunctions of mercury. He feels very well. His only symptoms are rather rigid pupils, absent patellar reflexes and obstinate constipation.

February 25, 1914. Wassermann's blood serum — and cerebrospinal fluid ++++. Pressure 150 mm. Noguchi +— and Nonne +. Cells 17 per cm. Lymphocytes.

April 11, 1914. Wassermann blood serum —.

Case II. He had received no medication since November 7. Considerable improvement is noted especially as to gait. There is still some numbness in feet and he complains of shooting pains in the right hypochondrium. Incoordination of the upper extremities is not so marked. Intraspinal treatment on April 9 of 30 cc. 45% serum. After the intravenous as well as the intraspinal inoculation, he suffered the most severe reaction of the series. Severe cramps in the thighs and legs predominated. April 7, Wassermann blood serum — and cerebrospinal fluid +. Fluid removed at time of intraspinal injection, Wassermann —.

Case III. February 17, Wassermann blood serum ++ and cerebrospinal fluid +++. Pressure 100 mm. April 20, he returned to hospital stating that he feels very well and has gained 20 pounds. His left patellar reflex is active and there is a slight response on the right side. There is but little incoordination of the upper and lower extremities. There is no pupillary improvement.

Southern Pacific Hospital.

UTERINE REPLACEMENT; WITH PARTICULAR ATTENTION TO THE BUTEAU SUSPENSION.*

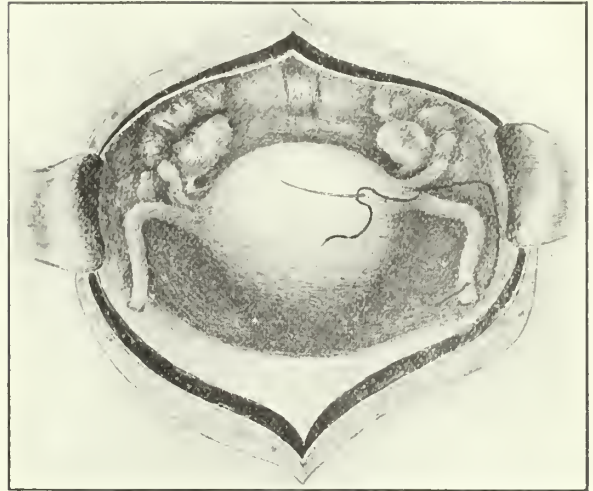
By CHARLES A. DUKES, M. D., Oakland.

I have no apology to make in presenting to you the subject of uterine replacement, knowing that I am to present for your consideration a method that is new in its application, and has proved efficient in a large number of cases. I also wish to make clear that I do not intend the discussion of uterine fixation. In a clinical period covering several years in the Samuel Merritt Hospital, I have used the various methods of uterine replacement that are in vogue, and feel that I may make a fair comparison of the more common ones.

In September 1912, Dr. S. H. Buteau presented before the twenty-fifth meeting of the American Association of Obstetricians and Gynecologists, held at Toledo, Ohio, a method for the correction of retro-displacements that has proven in the hands of us who have used it, a very desirable procedure. Presenting the reason for his method of treatment, he says: "It seems to me that only during the last few years have surgeons begun to appreciate keenly the fact that the so-called round ligaments are muscular in structure and in function, and that they merit the same consideration and the same treatment when they are left overstrained, as do any other muscles of the body under similar conditions.

"This idea has found expression in modifying

the underlying principles of the technic of but few operations that are practiced at the present



The Buteau Operation—1.

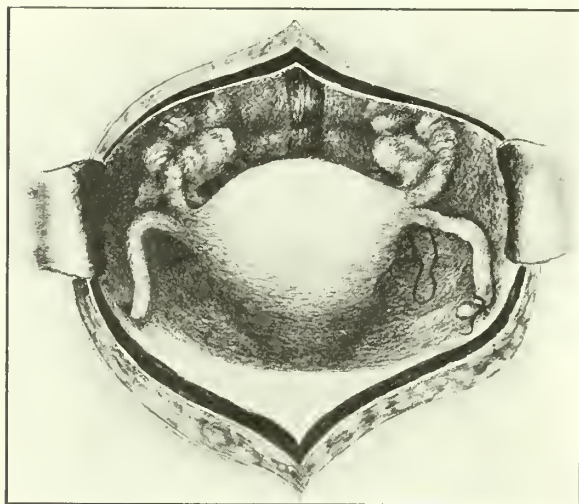
time. And before we can evolve accepted operations of the future, we must learn to think of these structures as muscles with duties to perform, and a good start could be made at once by calling them muscles. No one ligament, or muscle, can normally exercise its seemingly special function of keeping the uterus within its certain range of position without the assistance of all the other muscles. Any normal independent function exercised by a given muscle is dependent upon the normal co-ordination of the others. The plan of this natural co-ordination is interrupted at once by pathology or hereditary defects anywhere within the pelvis. Just as long as each of the muscles can meet the demands made upon it, just so long is the integrity of all secure, and no longer. I wish to emphasize the fact that in every acquired malposition of the uterus, of whatever nature, not only one but all the ligaments are concerned, as are all concerned when in normal position. It must follow that in correction of mal-position by the surgeon, not only one but all the ligaments must receive his attention."

Most all of the facts enumerated have been overlooked in most of the operations that have been suggested for the correction of misplacements. The Alexander operation shortens and still further destroys the muscular activity of the round ligaments. The Baldy operation, in drawing the round ligaments back of the uterus, and underneath the ovarian ligament, fastening it posterior to the uterus for the purpose of suspending it, while correcting the position overlooks the musculature of the round ligaments. He has also instituted a principle that enters into many of the operations,—namely to shorten the broad ligament by folding it upon itself. The Wiley and the Mann shorten the round ligament, but do nothing to increase its activity. The Dudley, while shortening the round ligament, also shortens the broad ligament, which probably gives it success. Coffey of Portland meets success by short-

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

ening the broad ligament, which is the stay or the main support of the uterus. Reed says: "In the normally poised uterus, the round ligaments are only incidentally suspensory. When displaced upward, as for example by distention of the bladder or rectum, or both, the round ligaments are placed on a tension, and limit the mobility. The uterus cannot become retro-displaced to any important degree without placing the round ligaments in a state of tension; and in cases of extreme retro-flexion, they may become permanently elongated. The broad ligament, the most important structure in maintaining the normal poise of the uterus, also becomes permanently relaxed. These pathologic changes point to the round and broad ligaments as the structures first demanding attention in perfecting the permanent reposition of the retro-displaced uterus."

It is not the purpose of this paper to call attention to etiology of displacement, except as may become necessary for the further elucidation of this operation.



The Buteau Operation—2.

As Dr. Buteau has told you in his paper, his attention was first called to the methods that we will speak of later, by accident. A case was brought to him for further operation who had been operated on for double inguinal hernia. The patient's abdomen was opened in median line, and it was found that the round ligaments had been completely severed, the uterus had dropped back, and the round ligaments retracted to the uterus. To make the correction of this condition, he used silk, dipping into the fascia just above the inguinal canal, dropping down, picking up the broad ligament, and retracted end of the round ligament, and fastening it to the fascia and peritoneum, then in and out beneath the round ligament over to the uterus, dipping down beneath the ligament of the ovary and fastening it posterior to the fundus of the uterus, coming over from the opposite side in the same way and tying them together in median line.

Several months later this patient was married and became pregnant, bore a healthy child in a normal manner, and a year later when examined,

the uterus was found to have resumed its normal position as before the accident occurred in cutting the round ligament.

Following this idea, because of the failure of a number of the various operations that have just been illustrated, various suture materials were tried for the purpose of maintaining the uterus in a normal position, acting as artificial ligaments until the natural ligaments have by rest regained their tone sufficiently to functionate in a normal manner. It has been found by experiment that kangaroo tendon will last 60 to 90 days,—hence this material has been adopted, and by the time of its absorption the ligaments will have regained their normal condition and function and hence the uterus itself will not fall back in the position for which the correction was made.

The technic of the operation is simple,—using a full curved non-cutting needle with an eye that will not cut the tissues; the fascia is grasped above the internal ring on the anterior abdominal



The Buteau Operation—3.

wall, avoiding the deep epigastric and femoral vessels which can be readily felt; a slack knot is tied and the needle is carried parallel with the round ligament just beneath its serous coat through the broad ligament over to the uterus, then down under the ovarian ligament into the fundus, emerging just short of the median line.

Proceeding in the same manner from the opposite side and tying, this puckers the round and broad ligaments and holds the uterus slightly anteverted. The body of the uterus is now in its correct axis, relieving the tension of the uterosacral ligaments as well as the round and broad ligaments and this condition will remain, as has been stated, for 60 to 90 days.

At the Samuel Merritt Hospital we have over fifty cases on record, and of all those we could keep under observation there have been no failures. It has only been possible to open the abdomen in one case, and that was four months after operation; in this case complete restoration of the round ligaments had taken place.

BUTTERMILK AND GREENS TREATMENT OF THREE CASES OF GRAVE SECONDARY ANEMIA.*

By JOSEPHINE JACKSON, M. D., Pasadena.

In the *Journal of the A. M. A.*, March 9, 1907, is an article entitled "Turnip Top Treatment of Chronic Diarrhea and Amoebic Dysentery," by Cunningham Wilson, M. D., and H. E. Pressly, M. D., Birmingham, Ala.

A mental note made at the time was recalled in June, 1910, when a case of secondary anemia with diarrhea, presented itself for treatment. Assuming that the blood destruction was due to absorption of the toxins of inimical bacteria present in the intestinal tract, and leaning toward Metchnikoff's theory of the action of lactic acid bacteria on the intestinal flora, a dietetic treatment was instituted with wholly satisfactory results.

This exclusive diet was as follows: Buttermilk made from tablets containing lactic acid bacteria, quarts $2\frac{1}{2}$ daily, in five doses; turnip top greens, ounces 4-6, three times daily; these were sometimes replaced by spinach. Dilute hydrochloric acid three times daily.

During the first two weeks, attacks of diarrhea were treated by the use of a two-quart enema of normal salt solution containing one-half dram of tannic acid. At the end of three weeks the patient was required to eat three full meals of regular table fare, in addition to the buttermilk and greens which latter were given only once a day. Some six weeks later, or after about three months of dieting, the patient returned to a milk and meat-free diet, which had been the habit of her lifetime.

Two additional cases treated in the same manner have given satisfactory results.

Case I. Miss M. L., age 55. Weight 110 lbs. Illness dating from 1904, when great loss of strength, shortness of breath and hemorrhages from the womb rendered her incapable of any but the slightest exertion. A careful clinical examination made on June 6, 1910, taken in conjunction with the history enabled one to exclude as etiologic factors, malaria, syphilis, malignant growths, unicariasis and hemorrhage. (The uterine hemorrhages had ceased several years previously.) Liver and spleen were palpable, the right lobe of the former extending a hand's breadth below the costal border, but the surface was smooth, and the consistency normal. The colon was visible throughout its extent, distended with gas. Stools numbered three to six daily, were of the consistency of paint, and light brown in color.

Blood examinations. Dr. Ethel L. Leonard, Los Angeles, June 6, 1910:

Hemoglobin 60%. Red cells 3,720,000.

Poikilocytosis marked. Polychromatophilia slight. No nucleated red cells. Other features negative.

July 12:

Hgb. 50%. Red cells 3,240,000.

September 22:

Hgb. 80%. Red cells 4,400,000.

The patient now weighed 121 lbs.

Examinations of stools had shown a gas-producing bacillus which was not identified.

In a few months the patient undertook a difficult work, and has continued up to the present date strong and free from all symptoms.

Case II. Mr. O. S., age 66. Weight 155 lbs. Ill for two years. Had been treated for diabetes and for nephritis. Complained of marked shortness of breath, failing strength, loss of appetite, numbness in hands and feet, and for a short time previously, of diarrhea. The urine was found to be normal. Physical examination showed viscera to be normal; no evidence of malignant growth. Color of skin a bronze green. No treatment except diet of buttermilk and greens for three weeks; an occasional addition to diet of grape fruit, oranges, lettuce, green onions, green peas. Dil. hydrochloric acid 15 drops after meals. After three weeks, full table diet in addition to buttermilk and greens.

Blood examination. Dr. Carl Parker, Pasadena.

Oct. 15, 1913:

Hgb. 45%. Red blood cells 2,640,000; no nucleated reds.

Oct. 25:

Hgb. 70%.

Nov. 8:

Hgb. 80%. Red blood cells 3,715,000.

Dec. 11:

Hgb. 85%. Red blood cells 4,550,000.

Is at present in most vigorous health and strength.

Case III. Mrs. H. M. L., age 73 years. Emaciated. Color lemon yellow; face puffy. Ill one and one-half years; bedfast for four months because of weakness. Appetite poor. Sweating a marked feature of the disease. Great distress from numbness of hands and feet. Mind often disturbed with the delusion of being away from home. Examination of urine showed excess of indican and pus cells microscopically. Heart normal; liver and spleen normal in size upon auscultatory percussion. The right kidney lies entirely below costal border, is enlarged and irregular in contour. Attached to it by a pedicle 2-3 inches in length is a mass less in size than the normal kidney, oval, smooth and slightly tender to the touch. No enlarged glands in the left supra-clavicular space, as might have obtained in malignant disease of the abdominal viscera. Outline of large bowel can be traced throughout its course, through the thin lax abdominal walls. Transverse colon extends from midway below the umbilicus sharply upward to splenic flexure. Sigmoid and cecum in usual positions. All markedly distended with gas. Treatment up to March 10 had been hematonics, purgatives and buttermilk in addition to generous diet.

Blood examinations. Dr. Stanley P. Black, Pasadena.

Dec. 12, 1913:

Hgb. 45%. Red blood cells 1,480,000.

March 3, 1914:

Hgb. 55%. Red blood cells 1,240,000.

White blood cells 5,050.

Treatment instituted March 10, 1914. Exclusive diet of buttermilk, turnip top greens and spinach. Dil. hydrochloric acid fifteen drops three times daily. No other medicine except heroin gr. 1-12 as needed for marked restlessness. During ten days there were three attacks of diarrhea, evidently due only to some factor that stimulated peristalsis, and not due to fermentation or putrefaction. It was accompanied by very little discomfort, and only a slight amount of mucus. The treatment of this symptom was high enemas of normal salt solution with a half dram of tannic acid, followed in two hours by one-half ounce of castor oil, and this in three hours by a one grain opium suppository. Diet during the diarrheal attacks was limited to six ounces of boiled milk every two and one-half hours.

Blood examination. Dr. Black.

March 24:

Hgb. 65%. Red blood cells 2,625,000.

White blood cells 11,000.

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

April 13:

Hgb. 78%. Red blood cells 3,724,000.

White blood cells 6,000.

Urine analyses varied but little except in amounts of indican, and in the finding microscopically of few or many pus cells. Never more than a trace of albumen. The degree of distension of the colon seemed to bear some relation to the amount of indican. However, the absorption of pus from a septic kidney must be considered as a factor in causing indicanuria and the profuse sweating, which has not abated in any appreciable degree. The probability of a possibly malignant surgical kidney is being considered.

THE DANGERS OF VAGINAL EXAMINATIONS DURING LABOR.*

By AUSTIN MILLER, M. D., Porterville.

"... in my own family I had rather that those I esteemed the most should be delivered unaided, in a stable, by the manger side, than that they should receive the best help, in the fairest apartment, but exposed to the vapors of this pitiless disease." Dr. Blundell, quoted by Oliver Wendell Holmes.

The subject matter of this paper is doubtless an old story but the occasional slighting of aseptic technic in obstetrics is justification for this review. Of course the knowledge of military sanitation was highly developed by western hygienists, but its practical enforcement awaited appreciation until it was efficiently applied by the Japanese. The principles of rural, school and municipal sanitation are well known, but the application of the knowledge is sadly lacking. And so the bacteriology of puerperal fever has been extensively investigated and very thoroughly worked out, but such knowledge is not so universally applied as might be desired.

In 1847 Semmelweiss investigated the frightful mortality attending labor in the Vienna Lying-in Hospital and concluded that the disease was a wound infection, and that it was due to the introduction of septic material by the examining finger. He advocated the use of chlorine water as a disinfectant for the hands of the attendants and as a result the mortality dropped from more than ten per cent. to about one per cent. The disease was a pestilence in maternity hospitals and but little less in private practice. Holmes's first paper appeared in 1843. The discoveries of the true nature of the malady were derided, however, and not appreciated nor given credence until Lister's revolutionary discovery popularized the antiseptic treatment of wounds.

The extensive bacteriological studies of the flora of the genital canal carried out in this country by Williams and abroad by Leopold, Ahlfeld and others have shown in brief that pathogenic bacteria are normal habitants of the vulva and lower vagina but are displaced by non-pathogenic micro-organisms in the upper part of the vagina. The

uterine cavity is probably free from bacteria normally.

In 1890 Leopold and others advocated the advantages of external examinations in labor and showed the dangers of internal examinations. It was further advised that in normal deliveries no internal examinations were required. In spite of this advice nearly a quarter of a century old it would seem that the greatest activity of some attendants at the time of confinement consists of frequent digital exploration of the birth canal. The point that the danger of infection lies in carrying pathogenic bacteria from the vulva to the uterus by internal manipulations seems to be too commonly overlooked. Indeed it is advised in a recent number of one of the best medical journals that to prevent puerperal infection the *nose* of the patient should be gently sprayed with an alkaline or mild antiseptic solution and that the *mouth* and *throat* should be washed with some mild antiseptic mouth-wash and the *teeth* thoroughly cleansed and then a vaginal examination may perhaps be made. This seems about equivalent to advising a military surgeon to spray the nose of a wounded soldier, to give him a gargle and then to proceed to probe his wound. One of the most beneficent advances of modern surgery is the teaching that bullet wounds must not be probed.

The danger then of internal examination is the danger of puerperal infection. In spite of careful disinfection of the hands and in spite of sterile rubber gloves there is ever the possibility of carrying pathogenic micro-organisms on the examining finger from the external parts into territory normally free from infectious flora. Moreover, the internal examination adds but little to the very complete diagnostic information obtained by the external examination of the abdomen. By internal touch it is often impossible to differentiate between the fontanelles and indeed the vertex and breech are frequently confused. This confusion is the more readily brought about by the formation of the caput succedaneum which may make it impossible to recognize the diagnostic landmarks. The degree of cervical dilation is about the only real information obtained. Such data as may be obtained at the expense of vaginal and uterine asepsis may be safely foregone.

By external palpation the presentation and position of the child is determined, as well as the degree of progress of the presenting part. If it seems as a result of the external examination and impeded progress of labor that internal examination and manipulation must be undertaken the procedure should be marked by the same aseptic technic that accompanies a surgical operation. The external genitals should be disinfected and the pubic hair cut or preferably shaved. The disinfected hands should wear rubber gloves that have been boiled. The labia should be separated and the examining finger introduced directly into the vagina without coming in contact with any external part. Remember that if Caesarean section must be done the prognosis is shadowed by every vaginal examination.

Antepartum douches and douches during the

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

puerperium are to be avoided as dangerous for the same reasons that make internal palpation dangerous. Moreover, they are without antiseptic efficiency and the washing away of the natural mucous secretion is undesirable.

It is strange that sometimes the woman in labor will think that she is being neglected if she does not receive the customary internal examination and she may express the criticism that she is not being helped with her labor. Thus firmly are ingrained the practices of the ancients in patient as well as doctor. It seems trite to say that the patient's asking that a dangerous maneuver be performed is no excuse for doing it. In fact the chief duty of the physician in attendance at the time of labor is to prevent meddling interference and to be ready for any unfavorable emergency. A masterful inactivity should mark his conduct. Prophylaxis is the best treatment of puerperal fever.

As we should know that bullet wounds are not to be probed, that a paralyzed bladder should not be catheterized but be permitted to leak, and as we should know that in the open treatment of fractures the fingers must be kept out of the wound, so must we recognize that internal examinations during labor must be avoided.

A CRUSADE AGAINST MEDICAL LICENSURE.

The attention of members of the State Society is urgently called to an initiative petition which recently circulated through the state and for which the necessary number of signatures was obtained to place the same on the ballot for the coming election. Many individuals signed this petition because the facts were misrepresented to them, and they did not realize that they were helping a proposed law that would have the effect of practically doing away with all regulation of the practice of medicine. The proposed act would repeal all other medical practice acts, and it would immediately license anyone who has been in the actual practice "of any drugless system for six months prior to the taking effect of this act," merely upon the payment of a fee of twenty-five dollars. It would provide that every licentiate shall have "the same rights and privileges granted to other persons now practicing any system of treating sick or afflicted human beings under any of the laws of the State of California," and would legalize birth and death certificates signed by the same. All licentiates would be permitted to use the title "doctor." On the Board of Examiners (nine members) there would be appointed representatives of at least seven "schools" of drugless healing.

The present Medical Practice Act, while not perfect, has proven to be better than many thought it would be, and with a few minor changes to be proposed before the coming legislature, it can be made a very good law. Some of the so-called defects might have been taken advantage of by those interested in lowering standards had not the Board of Medical Examiners seen that the law was properly interpreted and enforced in the interest of the great public for whose protection it

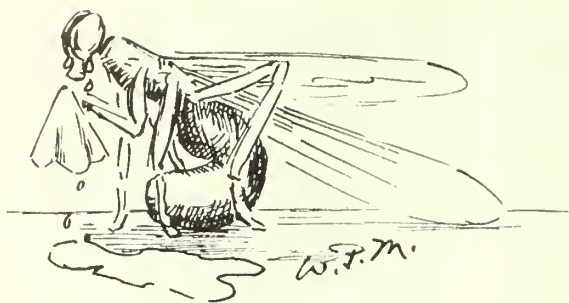
was framed. The present law provided for a period during which all medical teaching institutions could adjust themselves to meet the higher standards required. This period has about passed and now the law automatically increases the requirements to be met by ALL applicants to take the examinations.

After this year every student **before beginning** his work in a **medical** college, will be required to present credentials showing that (in addition to a standard high school education) "he has completed a course which includes at least one year of work, of college grade, in each of the subjects of physics, chemistry and biology." Drugless practitioner applicants who have not completed this additional work, and who have not made up the extra hours in a medical college **approved** by the Board of Medical Examiners, cannot take the examination for physician and surgeon licenses. The present law does away with all sectarian medicine, and divides all practitioners into two classes—"physicians and surgeons," and "drugless practitioners." The latter are definitely limited to the treatment of "diseases, injuries, deformities or other physical or mental conditions without the use of drugs, or what are known as medicinal preparations, and without in any manner severing or penetrating any of the tissues of human beings, except the severing of the umbilical cord."

Pre-medical educational standards for all applicants are definitely outlined and no applicant for either class of certificate can take the examinations, unless he is a graduate of a school or schools **approved** by the Board. The present Board of Medical Examiners has a College Investigating Committee, and has officially refused to extend its approval to certain "schools" which have not given proper or sufficient medical training.

The Chiropractics and allied quacks as well as many other illegal practitioners who have felt the strong force of the law recently, are behind this latest movement to practically do away with all regulation of the practice of medicine. That hypocritical friend of the public, "The League of Medical Freedom" (?) is deeply interested, and, it is suspected that it is one of the principal agents behind this movement to license anyone and everyone who desires to assume the numerous grave responsibilities that come to every physician, regardless of whether he is morally or mentally capable of doing so. A large fund has been collected for the purpose of helping along this pernicious initiative law and already the allied quacks have begun their newspaper campaign which promises to be very extensive. The real character of a movement usually can be determined by inquiry into what forces are behind it. In this case very little investigation will reveal a small army of "Ethiopians in the wood pile."

The Medical Practice Act and the Board of Medical Examiners constitute the only barrier protecting the public from the thousands "who seek the right to treat human ailments, including the incompetent or imperfectly trained product of low grade medical schools." (Colwell.) As usual, the incompetents, the quacks, and others interested in doing away with all medical regulation are assailing the law, and the regular profession, through whose efforts every uplift in standards has ever been accomplished, are interested in the protection of the public, by compelling all licentiates to meet higher educational and moral requirements. Standards all over the country are being raised with the result that better physicians are being produced. Will California keep up in the procession, or will she be the **only** State to take a backward step? The regular profession can easily save the situation by properly educating the public on this question. Inform your friends and patients as to the real character of the proposed initiative act.



THE HARMLESS LITTLE FLY.

The doctors have it in for me—
I'm sure I don't know why.
I'm just a cunning playful thing,
A harmless little fly.

They lam me with a swatter,
They trap me in a cage,
They mire me in molasses
Till I die in helpless rage.

They hold conventions on me—
Read essays long and wise—
And make **such** asses of themselves—
'Bout harmless little flies!

It's true I'm none too careful
As to where I place my feet.
It's true I'm rather thoughtless
About the things I eat.

I dote on garbage pudding.
I could live on stable stew.
I love to swim in sewers,
And in the cream-jug, too.

The typhoid germ counts me his friend,
Likewise my dear T. B.
They find it hard to get around,
They say, except for me.

I meet them at the sewer's mouth,
With other bugs galore.
They swarm upon my back and legs,
And then I blithely soar.

Full straight unto the nursery
I wing my joyous way.
The door's ajar; the nurse is out
(This is my lucky day!)

The baby sleeps. What fun to crawl
Upon its rosy lips!
And from its milk-cups standing by
I steal such luscious sips.

And so thro' all the sunny day—
You'd wonder if you knew
The many pleasant little stunts
One little fly can do.

But still the doctors lay for me—
I'm sure I don't know why.
The horrid, cruel, hateful brutes,—
A harmless little fly!

—W. P. Millspaugh.

BOOK REVIEWS

The Clinical History in Outline. By Paul G. Wooley. 53 Pages. Published by C. V. Mosby Co., St. Louis. Price, \$1.00.

We have in this book a short outline to be followed in the taking of histories and the making of physical examinations, such as is usually supplied students entering upon their clinical work; a slightly fuller outline to be followed in investigating the acute infectious diseases; and finally a list of symptoms with the conditions commonly giving rise to these individual symptoms. The student should find it helpful in his first few weeks of clinical work, but should very soon outgrow it. For the physician with any clinical training, there are many standard works which more thoroughly cover the ground. W. W. B.

Anatomy and Physiology. A Textbook for Nurses. By John Forsyth Little, M. D., Assistant Demonstrator of Anatomy, Jefferson Medical College, Philadelphia. Illustrated with 149 Engravings and 4 Plates. Lea & Febiger, Philadelphia and New York. 1914.

This is a condensed anatomy and physiology written in clear, concise style, well illustrated and well printed. The heavy type scattered through the pages and not only at the beginning of paragraphs permits of rapid reference on any subject. The questions at the end of each chapter are also an aid to study. The anatomy is more complete than usual in a nurses' course of study and this adds to the value of the book. In the past the very cutting out of much material made the text difficult to grasp. Perhaps this book might be made a little more attractive and readable if each sentence were not weighed to contain no extra word. As a reference book, this system is ideal—as a student's book a trifle difficult.

M. I. JUDELL.

Infant Feeding. By Clifford G. Grulee, A. M., M. D., Assistant Professor of Pediatrics at Rush Medical College, Chief of Pediatric Staff, Cook County Hospital. Second edition, thoroughly revised. Octavo of 314 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1914. Cloth, \$3.00 net.

The author of this book has approached a very difficult subject, that of infant feeding in the proper way. He has taken it up in the only practical way, that of considering the question from the anatomical, physiological, bacteriological and metabolic standpoint. His viewpoint is essentially German and is a good presentation of the modern German school. He follows Finkelstein's classification of the disturbances of nutrition fairly closely, though we are glad to note he is not quite as rigid in his acceptance of this classification.

The closing chapters on Nutrition in Other Conditions are not as full as one would expect from the way he has handled the subject in the earlier chapters. For those who want to get acquainted with the German ideas in feeding this book will be found to be a very convenient way to do so, as his presentation of their views is very good. His illustrations are not up to the contents of the book. This book should be studied by all who are interested in the problem of infant feeding.

W. P. L.

The Diseases of Children. By Henry Enos Tuley, M. D., late Professor of Obstetrics, University of Louisville, Medical Department. Visiting Physician Masonic Widows' and Orphans' Home, Louisville, Ky.; Secretary of the Mississippi Valley Medical Association; Ex-Secretary and Ex-Chairman of the Section on Diseases of Children, American Medical Association; Ex-President American Association

Medical Milk Commission, etc. With 106 Engravings and three Colored Plates. Second Revised Edition. St. Louis: C. V. Mosby Company. 1914.

The second edition of Dr. Tuley's book is a considerable improvement over the first edition as far as typographical errors, corrections and make-up go. There are few illustrations and the ones that are given are not of as much value as the illustrations in such a book might be.

We are sorry to see that he still clings to the old classification of diseases of the intestinal tract when so much has been done since his first edition in putting the nutritional conditions of infancy on a more scientific basis by more exact studies in metabolism. We are glad to see that the suggested standards and methods for the production of certified milk as adopted by the American Society of Medical Milk Commissioners have been reproduced in full in the appendix.

The book as a whole does not add anything distinctive to a number of other books on the diseases of children at present on the market.

W. P. L.

The Principles of Pathologic Histology. By Frank B. Mallory, M. D., Associate Professor of Pathology, Harvard Medical School and Pathologist to the Boston City Hospital. Octavo of 677 pages, with 497 figures containing 683 illustrations, 124 in colors. Philadelphia and London: W. B. Saunders Company. 1914. Cloth, \$5.50 net.

The book by Mallory fills a distinctive place among present-day textbooks. He who searches for an elaborate description of pathological processes with extensive bibliographies will be disappointed, for such is neither the purpose nor the scope of this work. But one who wishes a clear, concise and accurate account of the most important pathological processes will find it in this book.

The descriptions and conclusions are a bit didactic and rigid at times perhaps, but whatever the book loses on this score it gains in presenting fundamental and salient points. To one who is often lost in the mazes of contradictory opinions and descriptions often found in other books, will turn to it with a sigh of relief as embodying the views of a master with a long and ripe experience. Worthy of especial note are the excellent drawings and microphotographs that illustrate the book.

R. H. M.

The Practice of Pediatrics. By Charles Gilmore Kerley, M. D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Octavo of 878 pages, 139 illustrations. Philadelphia and London: W. B. Saunders Company. 1914. Cloth, \$6.00 net; half morocco, \$7.50 net.

This book is an enlarged and revised edition of Dr. Kerley's earlier work, "The Treatment of Diseases of Children." It is especially strong in treatment, a particular in which so many books are woefully deficient. No one can read it without getting many valuable points even if one is not entirely in sympathy with his recommendations.

The book is not well put together for study and is not encyclopedic in character. It is, however, one of the best books on children's diseases for the general practitioner who wishes to find out how Dr. Kerley has treated children's diseases in his own large and successful practice. The book loses in this very fact, since he does not attempt to say whether his experience agrees with that of the pediatricists of the world.

Among some of the most valuable chapters are those on Gymnastic Therapeutics, and General Therapeutic Measures. His chapters on bronchitis and cyclic vomiting, asthma, urticaria and tetany

are especially well written and up to date. However, we are sorry to see that Dr. Kerley still adheres to the old method of feeding and dismisses the calorimetric method as of little value. He says very little or nothing as to the role of salts in infant metabolism.

On the whole the book is one of the best there is. His illustrations are good and the histories of cases from his own large experience are used to advantage. The book, we venture to say, will have a large sale on account of its practical value.

W. P. L.

The Anatomic Histological Processes of Bright's Disease and Their Relation to the Functional Changes. By Horst Oertel. W. B. Saunders Co., Philadelphia. 1910.

In the first place, the book is an attractive octavo volume of some two hundred pages printed with large clear type on good paper and with numerous excellent illustrations, many of them colored. The appearance of a publication by this author suffices to arrest the interest of the medical reader, and his directness of style and clearness of diction make the reading of what might otherwise be a rather heavy treatise attractive. He deals with the pathology of the kidney both from the standpoint of the clinician and of the pathologist, and argues for a new classification of kidney diseases based upon advances of the knowledge of the subject within recent years. This classification has the advantage of being simple and brief, and while it adheres rationally to the anatomic changes, is not inconsistent with the conclusion of the clinician.

It has been recognized for some time that the present classification of renal inflammations is inadequate; it is very possible that his classification may meet the demands now made. At any rate, there is no doubt that it is an improvement over the past.

The book is a series of five lectures delivered at the Russell Sage Institute of Pathology at the City Hospital, New York. The first lecture covers the history of research into Bright's disease delightfully, and brings the subject down to the discussion of modern pathology of the kidney, and outlines his proposed classification which, however, must be read to do it justice, as the enumeration of a few terms here would only be misleading. The structure and function of the normal kidney are reviewed and the succeeding pages given up to a careful consideration of the several types of kidney changes.

Of especial interest is his logical differentiation between productive nephritis (chronic interstitial nephritis) and senile kidney. In short, the subject is well and convincingly treated, and the book as a whole is an epitome of our present knowledge of kidney inflammations.

G. E. E.

SOCIETY REPORT

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

At a special meeting of the Society held June 9th, the meeting having been called at the request of ten members, the fee bill presented by the insurance companies and the Industrial Accident Commission, the adoption of which had been recommended to the county societies by the State Society, was again discussed. The following resolution was presented and unanimously carried:

Resolved, That it be the sense of this meeting that this Society refuse to accept the proposed Industrial Accident Insurance Fee Bill, and call upon the Board of Directors to reject it.

It was also moved and carried that San Francisco County Medical Society reject the whole of Section 22 of the report of the House of Delegates, as published on pages 243 and 244 of the June State Journal.

At a special meeting of the Board of Directors held June 16th it was moved that the mandatory instructions sent by the San Francisco County Medical Society be received, and their import conveyed to the Council of the State Medical Society.

Seconded and carried, with two dissenting votes.

No section meetings were held in June.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. Fred P. Clark, Friday evening, May 29th. The following members were present: Drs. J. D. Dameron, S. E. Latta, L. Dozier, C. F. English, Minerva Goodman, W. J. Backus, H. E. Sanderson, Mary Taylor, Margaret Smyth, B. J. Powell, C. R. Harry, S. P. Tuggle, F. P. Clark, J. T. Davison and R. T. McGurk, with Dr. W. I. Terry of San Francisco as guest.

The minutes of the last meeting were read and approved. A communication from the American National Red Cross was read relative to establishing a corps of physicians in this community to be at the call of the National Red Cross. On the motion of Dr. McGurk, seconded by Dr. Harry, the following committee was appointed to investigate the advisability of the same: Drs. W. J. Backus, B. J. Powell, Minerva Goodman.

Dr. Terry read an excellent paper on "Anoci Association." Inasmuch as the introduction of Anoci Association as an aid to modern surgery is now looked upon as a permanent and logical procedure, the paper was of great interest to local surgeons. Like most new things, this method is not in general use, and there are those, who having had excellent results thus far with the old methods, are not enthusiastic in its support, but who will not deny the fact that this method is the logical one in nervous and hysterical patients and in those who have cardiac or renal complications.

The discussion was opened by Dr. English, who told of having seen this method used by Crile and Cushman a year and a half ago in the East, and he was very much in favor of operating with this method. Dr. Powell stated that in his work on tonsils, he had found the use of Anoci Association to be quite an advantage. Dr. Dozier stated that he had taken up the giving of oxygen-nitrous-oxide anesthesia at the urgent request of some local surgeons and he believed its use would become more general as surgeons became familiar with its advantages. Dr. Dameron said that he had had good results without the use of Anoci Association or of nitrous oxide anesthesia, and that while he did not deny that the method was excellent for certain cases, as a matter of general routine, he believed it would be a long time before the present method would be replaced by it.

At the conclusion of the discussion, the members were invited to partake of refreshments.

R. T. MCGURK, Secretary.

PROSECUTIONS UNDER THE LAW.

Sacramento, Cal., June 30, 1914.

Dr. P. M. Jones,
Secretary, State Society,
San Francisco.

Dear Doctor:

Enclosed herewith please find attorney's report as to the progress of prosecution of violators of the Medical Practice Act in the northern section of the state, which may be of interest to the readers of the California State Journal of Medicine.

Respectfully yours,

C. B. PINKHAM, Secretary.
June 12, 1914.

Dr. Charles B. Pinkham,
Secretary, Board of Medical Examiners,
San Francisco, California.

Dear Doctor:

On behalf of the Legal Department for San Francisco and Alameda Counties, I beg leave to submit the following report of violators of the Medical Practice Act of cases pending and arrests made, from March 28, 1914, to June 13, 1914:

Wong Shue Nin, convicted April 1; probation for two years.

M. Fleishman, convicted April 21; probation for two years.

C. W. Wong, convicted April 13; probation for two years.

C. E. Blanchard, dismissed April 1.

L. H. Schwerin, dismissed April 27.

R. R. Smith, convicted April 1.

Chow Juyan, convicted June 10; \$600 and six months.

Chow Let, acquitted June 10.

Tom J. Chong, pending June 13.

Yet Lee, dismissed June 11.

Ida Rennie, dismissed June 11.

Chow Juyan, pending June 13.

Chow Let, pending June 13.

W. T. Allen, dismissed June 11.

Y. Q. Gine, pending June 13.

I also desire to report the discontinuance of business of the following unlawful medical institutions: M. S. Cheneweth, M. D., Inc.; Globe Medical Company, California Medical Dispensary. The Nat King Specialists, Modern Specialists, Dr. Lee Co., Woman's Remedy Company, Raymond Remedy Company, Cook Medical Company, Prof. Blanchard and Son, Vera Vita Company, C. W. Wong Company, Vita Vigor Company, San Francisco Medical Laboratory.

Respectfully,

(Signed) LOUIS H. WARD,
Attorney.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

THE DIVORCEMENT OF THE PROFESSION OF PHARMACY FROM THE DESTRUCTIVE ELEMENTS OF THE DRUG BUSINESS.

Medicine in its practical development is largely dependent upon the science and art of Pharmacy. The community of interest between these professions is such that influences detrimental to the one must inevitably reflect upon the integrity of the other. The pharmacist as a member of a historic and honorable calling should be well above the trickeries and practices of the charlatan and quack. The physician in self-defense should be the first to frown upon and rebuke vicious practices. Incompetency; substitution of inferior, contraband or fictitious products; the sinister bribe and special discount evils; demoralizing and ruinous cutting of prices, are parasitic upon all legitimate endeavor and should be countenanced by no self-respecting member of either profession.

The great strides made in medical science in the past decade or two have rendered the pharmacy of our forefathers obsolete. Not only have recent developments revolutionized the science and art of pharmacy but the commercial aspects of the situation are certain to bring about very momentous changes. The pharmacist must, to retain his professional identity, deliver himself from the heterogeneous hodgepodge which commonly characterizes

his environment. He has reached the "parting of the ways" and must either devote himself to the broader and humanitarian aspects of his art, or apply himself to the purely commercial pursuits of the tradesman-druggist. For him to essay the former and at the same time center upon the latter, is a corollary and deception which cannot longer endure.

It is this type of hybrid druggist-pharmacist which has permitted the unprecedented development of the great *pharmaceutical octopus*. Those great manufacturing establishments have long since outgrown the purposes for which they were created—the production of legitimate pharmaceuticals—and have developed into gigantic proprietary-medicine enterprises. The essential differences between these quasi-reputable establishments and the old-time out-and-out patent-medicine faker, are in the methods of exploitation. The old-time faker approached and appealed direct to the laity. The great pharmaceutical manufacturer, under the cloak of respectability, enlists the active co-operation of both doctor and druggist, and through these influential mediums, establishes himself with the public. Once entrenched, his position is well-nigh impregnable.

The source of large profit to the pharmaceutical manufacturer is the "specialty" in which a proprietary (patent or trademark) interest is maintained. The physician, through extensive advertising and personal solicitation, is induced to prescribe these multitudinous specialties, taking the producer's word for it that they possess exceptional virtues. The druggist in turn, lacking the power of discrimination and ability to advise with his medical confreres, falls readily into line, taking it for granted that if the doctor prescribes the nostrum, it must be all right.

Not satisfied, and as a further means of expansion, the octopus reaches out, through its "private formula" department, to the promoters of lay patent-medicine enterprises, and millions of pills, tablets and other preparations are supplied for public consumption. The manufacture of the majority of "patent" medicines on the market, is in the hands of the great pharmaceutical manufacturing establishments. They have the facilities and can do this work better and cheaper than any small concern. A concern exploiting a line of female preparations was put out of business by the U. S. postal authorities in San Francisco some months ago. The line of suppositories, tablets, etc., was manufactured by a Detroit firm known throughout the world. A representative of this pharmaceutical house bemoaned to the writer, the loss of this "fat" business! These gigantic enterprises laboring under enormous expense, cannot be too particular as to the source of their profits. Competition, the necessity for constant expansion and the payment of generous dividends, are other factors which impel the addition of new therapeutic "novelties" to the already bewildering lists.

The great army of druggists appear oblivious to the part they are induced to play in this great scheme of exploitation. Or, in an effort to re-

habilitate the dwindling exchequer, form co-operative organizations for the manufacture of their own lines of proprietary specialties.

A new and distinct type of man must evolve from this state of pharmaceutical demoralization. The professional pharmacist—the man of scientific attainment and high character—must step into the breach and redeem his lost estate. There are few fields so large and promising as the pharmaceutical field for men of the proper caliber.

The scarcity of good pharmaceutical timber is largely accounted for by the avidity with which the octopus "gobbles up" promising talent, to be converted into detail men, branch house managers, and members of the "scientific" staffs. It is further accounted for by the failure on the part of the colleges of pharmacy to attract and develop the proper material. The status of pharmacy as typified in "the drug business" is not calculated to attract men of exceptional abilities.

Finally, the hold the octopus has upon the colleges of pharmacy through endowments, scholarships, and "interlocking directorates" is not conducive to independent thought and the development of progressive ideals upon the part of the student body; not to mention the muzzling influence of the great pharmaceutical interests upon the medical and pharmaceutical press, from which the main source of revenue is derived.

The one great hope of the broad-minded progressive pharmacist, as also the physician, is the work of the Council on Pharmacy and Chemistry of the American Medical Association.

Let all that is good and worthy in both professions, aid in every way possible, the great work of the Council. Therein lies the salvation of *pharmacy as a profession!*

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Electrargol.—Electrargol is a colloidal solution of silver, containing silver, equivalent to 0.25 per cent. metallic silver. It is said to be useful in febrile diseases, even in those which are not of a septic character. It is also used externally in inflammatory conditions. For subcutaneous, intramuscular or intravenous injections, electrargol is supplied as Electrargol for Injection in ampoules containing 5 Cc. For external use electrargol is supplied as Electrargol for Surgical Use in bottles containing 50 Cc. (Jour. A. M. A., June 6, 1914, p. 1808).

Refined and Concentrated Tetanus Antitoxin.—Marketed in packages containing 5,000 units (curative dose) put up in syringe containers. E. R. Squibb and Sons, New York (Jour. A. M. A., June 13, 1914, p. 1890).

Culture of Bulgarian Bacillus, Mulford.—A pure culture in tubes of the *Bacillus bulgaricus*. It is designed for internal administration for the purpose of establishing lactic-acid-producing bacilli in the intestines and for external use. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., June 13, 1914, p. 1890).

Lactobacilline Tablets.—A pure culture of the *Bacillus bulgaricus*. These tablets give rise to the production of considerable quantities of lactic acid.

which tends to restrain the growth of putrefactive organisms in the intestines. Franco-American Ferment Co., New York (Jour. A. M. A., June 13, 1914, p. 1890).

Lactobacilline Liquide, Culture A.—A pure culture in tubes of the *Bacillus bulgaricus* grown in a neutralized sugar bouillon, each tube containing from 5 to 6 Cc. Its actions and uses are the same as those of Lactobacilline Tablets. Franco-American Ferment Co., New York (Jour. A. M. A., June 13, 1914, p. 1891).

Lactobacilline Liquide, Culture D.—A pure culture in tubes of the *Bacillus bulgaricus* grown in a neutralized bouillon. Its action and uses are the same as those of Lactobacilline Tablets. Marketed as Lactobacilline Liquide, Culture D., Small—containing 5 Cc., and Lactobacilline Liquide, Culture D., Large—containing 16 Cc. in each tube. Franco-American Ferment Co., New York (Jour. A. M. A., June 13, 1914, p. 1891).

Lactobacilline Liquide, Infant's Culture.—A pure culture in tubes of the *Bacillus bulgaricus* in a whey medium. It is employed in the treatment of diarrhea or dysentery in nursing infants or young children. Franco-American Ferment Co., New York (Jour. A. M. A., June 13, 1914, p. 1891).

Lactobacilline Glycogene Tablets.—Tablets containing pure cultures of the *Bacillus bulgaricus* and the *Glycobacter peptolyticus*. The *Glycobacter peptolyticus* transforms into sugar the amylaceous substances in the diet, thereby furnishing a pabulum for the *B. bulgaricus*, which in turn transforms the sugar into lactic acid. These tablets are designed for the prevention and treatment of intestinal diseases. Franco-American Ferment Co., New York (Jour. A. M. A., June 13, 1914, p. 1891).

Lactobacilline Glycogene Liquide.—A pure culture in tubes of the *Bacillus bulgaricus* and the *Glycobacter peptolyticus*. Its action and uses are the same as those for Lactobacilline Glycogene Tablets. Marketed as Lactobacilline Glycogene Liquide, Small—containing 5 Cc., and Lactobacilline Glycogene Liquide, Large—containing 16 Cc. in each tube. Franco-American Ferment Co., New York (Jour. A. M. A., June 13, 1914, p. 1891).

Lactobacilline Milk Tablets.—Tablets containing pure culture of the *Bacillus bulgaricus* and *Bacillus paralacticus*. These tablets are used in the preparation of scientifically soured milk. Franco-American Ferment Co., New York (Jour. A. M. A., June 13, 1914, p. 1891).

Lactobacilline Suspension.—A pure culture in tubes of the *Bacillus bulgaricus* grown in a neutralized bouillon medium. This culture tends to inhibit the growth of deodorant, putrefactive and pathogenic organisms and is used externally in various suppurative conditions. Marketed as Lactobacilline Suspension, containing 5 Cc. and Lactobacilline Suspension, Surgical, containing 20 Cc. in each tube. Franco-American Ferment Co., New York (Jour. A. M. A., June 13, 1914, p. 1891).

Lactobacilline Milk Ferment.—A pure culture in tubes of the *Bacillus bulgaricus* and *Bacillus paralacticus*. Its actions and uses are the same as those of Lactobacilline Milk Tablets. Franco-American Ferment Co., New York (Jour. A. M. A., June 13, 1914, p. 1891).

Prophylaxis of Tetanus.—The following procedure is advised: Remove every particle of foreign matter from the wound. Dry the wound and treat every part with iodine or cauterize it with a 25 per cent. phenol solution and apply a wet pack saturated with boric acid solution or alcohol. Inject as soon as possible, intravenously or subcutaneously, 1,500 units of antitetanic serum and repeat the injections if indications of possible tetanus arise. In no case close the wound, but allow it to heal by granulation (Jour. A. M. A., June 20, 1914, pp. 1964 and 1971).

The Absorption of Iron.—The belief that organic compounds of iron were superior to inorganic iron salts arose before it was known that the bowel forms the most important channel for the excretion of this element, when the failure to find an increase in the amount of iron eliminated with the urine by means of the kidneys after ingestion of the element in some form or other was taken as an indication that it had not been absorbed. To-day it is known that iron can be absorbed and excreted by the intestinal wall. Experiments have demonstrated that both inorganic and organic iron can be absorbed and satisfactorily carry out the purposes for which iron is administered (Jour. A. M. A., June 13, 1914, p. 1913).

Liquid Albolene.—This is a light variety of liquid petrolatum marketed as a proprietary medicine, exploited in an objectionable manner and with more or less misleading claims. It is said to come from Russia and differs from American products in being entirely nonfluorescent—an immaterial difference (Jour. A. M. A., June 27, 1914, p. 2048).

Cystogen.—At a meeting of physicians recently, the question was asked: Why is Cystogen, which is just plain hexamethylenamin, not recognized by the Council on Pharmacy and Chemistry? The answer is simple: Because the therapeutically suggestive title as well as the method of exploitation encourage its indiscriminate and ill-advised use, both by the medical profession and the public (Jour. Mo. State Med. Assn., June, 1914, p. 473).

Scopolamin-Morphin Anesthesia.—McClure's Magazine for June contains a sensational account of the use of scopolamin-morphin in anesthesia as used by Krönig and Gauss at Freiburg. In America the scopolamin-morphin anesthesia has received little attention. It is far from safe and can be carried out only in hospitals. Morphin and scopolamin should not be used in fixed proportions (Jour. A. M. A., June 6, 1914, pp. 1815 and 1829).

Glyco-Heroin, Smith.—A report of the Council on Pharmacy and Chemistry explains that Glyco-Heroin, Smith, although containing 1/16 grain heroin to the teaspoonful, is exploited in a way to encourage self-drugging by the layman. The advertising matter suggests the administration of Glyco-Heroin, Smith, to children and much of it has contained the evident falsehood that this heroin mixture does not produce narcotism or habituation. The possibility of habit formation should be sufficient to induce the thoughtful physician to avoid the use of Glyco-Heroin, Smith (Jour. A. M. A., June 6, 1914, p. 1826).

Malt Nutrine.—This product of the Anheuser-Busch Brewing Association was declared misbranded by the government authorities because the label claimed that it was a highly concentrated extract of malt, which was untrue. Malt Nutrine was found to contain 1.6 per cent. alcohol and extravagant therapeutic claims were made for it (Jour. A. M. A., June 20, 1914, p. 1981).

Buffalo Lithia Water.—The fallacy that diseases are due to uric acid and the fallacy that lithium would eliminate the uric acid has made mineral waters highly profitable—even when lithium was present only in infinitesimal amounts. One of the most widely used "lithia waters" was Buffalo Lithia Water, later called Buffalo Lithia Springs Water, which has been declared misbranded by the Federal Courts because it was shown to contain less lithia than does Potomac River water and that a person would have to drink 150,000 to 225,000 gallons of the water to obtain an ordinary dose of lithia. The testimonials certifying to the high efficiency of Buffalo Lithia Water and its superiority to lithium compounds given in the past by physicians eminent in their profession, certify to the unreliability of clinical observations (Jour. A. M. A., June 13, 1914, p. 1909).

DR. VAUGHAN'S REPORT ON STANFORD.

University of Michigan,
Ann Arbor,
Department of Medicine and Surgery,
Office of the Dean.

June 9, 1914.

President J. C. Branner, Leland Stanford Jr.
University, Palo Alto, Cal.

Dear Doctor:

In compliance with your telegraphic request I have visited Palo Alto and San Francisco and inspected the libraries, laboratories and hospitals of Stanford University. The laboratories of chemistry (general, physical, inorganic, organic and physiological), biology, histology, neurology and physiology are well housed, adequately equipped and exceptionally well manned. In all these, high grade work is being done. The laboratories of bacteriology and anatomy need better housing and I understand that this is to be provided in the near future. But in the buildings now occupied, most excellent work is being done. In fact, each of the scientific departments at Stanford is under the direction of an eminent man supplied with able and enthusiastic assistants and with necessary equipment. There is abundant evidence even in a hasty inspection that the appropriations have been economically and wisely expended and that good work is being done both in instruction and in research.

I wish to compliment the Trustees and President upon the evident wisdom which they have displayed in the development of these departments of the University. What I have said of the scientific branches is equally true of the other departments of Stanford University. Although one of the youngest of the higher institutions of learning in this country Stanford ranks as one of the best in all departments, both scientific and humanistic. In all branches it represents the highest aims and ideals. While I am not fitted to express anything more than a general opinion as to other than scientific education I wish to emphasize the fact that all learning is one, and the same spirit should pervade the whole. This I believe to be true at Stanford. It furnishes a wholesome atmosphere in which the student can grow, whatever special line of training he may follow later.

The greatest need of our country is the man whose fundamental knowledge is broad and comprehensive and whose special training is exact. No man can have useful knowledge of a part unless he has general knowledge of the whole. The working of the part must be in harmony with the movements of the whole; otherwise disaster is the result. While I am especially interested in medical education, I recognize the fact that it is futile to try to develop a good medical man out of one whose fundamental training has not been sound. The young man who has learned to work with the right spirit, whether it be in Greek or biology, in philosophy or chemistry, will enter medicine, law or any profession in the right frame of mind and will be likely to prove an honor in his chosen profession. In his preliminary college training the prospective medical student should not be confined to the physical or biological sciences. It is desirable that he know the classics, history and philosophy, and it is most desirable that the training that he gets along these lines should be of the highest grade.

I believe that Stanford University furnishes suitable conditions for the development of the young man who is going into medicine. Therefore I hope that the medical work done at Palo Alto may continue. If the medical school should be closed, this would relieve Stanford of only one of the laboratories at Palo Alto. Physics, chemistry, biology, physiology, histology, embryology, neurology and bacteriology must be taught and research work in these branches must be done in a

university of the high rank Stanford holds. Closing the medical school would give only trifling financial relief to the University. I therefore recommend that the premedical and medical work now done at Palo Alto be not only continued but be developed as fast as the finances of the University permit. I make this recommendation not only for the good of the medical school, but, as I believe, in the interest of the University as a whole. If the Medical Department should be discontinued, anatomy is the only subject which could be dropped at Palo Alto and even this should not be done. Anatomy is one of the great and fundamental biological sciences and even human anatomy should be taught in a great scientific University. Anatomy is no longer taught as a mere foundation for medicine and surgery. It includes the development of structure from the lowest to the highest forms of life.

I went to San Francisco and made inspection of the library, hospital and laboratories of the medical school.

The Lane library is one of the best medical libraries in the country. It is supplied with practically all the best medical journals so arranged as to be most available to members of the faculty and students. Its location in regard to the hospital and laboratories is quite ideal. It is worth much to both the clinical and the research man to have at his hand the best contributions of the world. When a problem comes up for solution the first thing to learn is to ascertain what has already been done along this line. A medical school without a library is like a boat without a pilot and much time is likely to be lost in drifting. The medical department of Stanford is fortunate in the possession of its library.

While the present hospital building is somewhat out of date, it is, so far as I can see, admirably managed both in caring for the sick and in the instruction of students. The outpatient department systematized as it is, is both a great, broad and needful charity and at the same time a source of varied and comprehensive instruction to students. The addition soon to be made to the hospital will modernize the institution. It will bring more pay patients to the institution and thus furnish the funds with which the less fortunate can be cared for. I was greatly pleased with the management of the hospital. The laboratories in the hospital are ably conducted and fairly well equipped. Some of them will probably have enlarged and improved quarters when the addition is made to the hospital.

As I understand, the total cost of the medical department is now about \$100,000 per year. This cost will slowly increase. Notwithstanding this fact I strongly urge that the medical school be not only continued but be developed. In its development the quality of its work should be constantly held in mind. The number of medical students should be kept small. Quality and not quantity should be the aim. I believe that in the near future the medical department will be a source of strength to the University in many ways. First, in the importance of the research done and the benefits that such research will confer on the race. Within the past thirty years the average human life has been increased nearly fifteen years and the whole life has been made more comfortable. This is a work to which a great University should contribute. The opening of the Panama Canal will bring to the Pacific Coast many health problems which can be best solved in such a school of instruction and research as I believe Stanford will develop. Second, I am firm in the belief that the medical school will attract large donations, both for research and the clinical work. Philanthropists will see that the best service they can render lies in the direction of improved health conditions. Third, medicine is now attracting to its ranks many of the best

of our young men and this will be a source of strength to the University.

Lastly, I come to the matter on account of which I was called to visit you. The time may come when it may be wise to consolidate the two University medical schools of San Francisco, but I do not believe that this would be wise at present. Stanford, from what I can learn, can afford to develop its medical school without material hindrance in the growth of other branches and I believe that this is the wise thing to do.

I am aware of the fact that a hasty visit such as I have made may give erroneous impressions and I would not have you attach any great importance to this report, but I have tried to look at matters from a broad viewpoint and to hold constantly in mind the good of Stanford University as a whole. I have considered it unnecessary to go into financial or other details with which you are much more familiar than I am.

In conclusion I wish to thank you and other members of your faculty for the many courtesies shown me and to express the hope that the growth of Stanford University during the past quarter of a century, phenomenal as it has been, may be surpassed in its future developments.

With great respect, I am

Yours most respectfully,

V. C. VAUGHAN.

FULL TIME TEACHING SECURED.

Delivery will be made in July at Baltimore of securities valued at \$1,500,000, presented by the General Education Board to the Medical School of Johns Hopkins University. This gift is to be known as the William H. Welch Endowment for Clinical Education and Research.

The securities will be accepted on behalf of Johns Hopkins Medical School by Mr. R. Brent Keyser, chairman of the Board of Trustees. The actual transfer of the principal of this fund to Johns Hopkins University signifies that an important and novel feature relating to the gift will have become an accomplished fact, namely, that the organization of the Medical School should be so arranged that the entire income from this fund could be utilized for the support of full-time teaching and research departments of Medicine, Surgery, and Pediatrics, or diseases of children.

The express proposal made by the trustees of the Johns Hopkins University was that in reorganizing these three departments, professors and their assistants should hold their posts on the condition that they become salaried university officials, and that they accept personally no fees whatever for any medical or surgical services which they might render.

The hospital wards and out-patient departments are to be under the control of the university medical or surgical teachers, but over and above their work in the public wards, the teachers are to be free to render any service required in the interest of humanity and science. They are to be free to see any patient they desire to see.

Patients, however, of the usual private patient type, will pay a reasonable fee to the University, rather than to the professors personally. The time and the energy of the professors are to be fully protected, not only because their salary eliminates financial interest on their part, but because they are themselves to become sole judges as to whether or not particular cases shall or shall not command their personal attention.

In order that the time and energy of the professors thus safeguarded might be properly utilized under favorable conditions, the endowment was made large enough to provide adequate salaries to attract the ablest professors and also to pro-

vide them with assistants, well-equipped laboratories, books, and other necessary facilities.

Simultaneously with the completion of the reorganization of the Johns Hopkins Medical School in accordance with this new plan, the University trustees have chosen Dr. Theodore C. Janeway, hitherto Professor of Medicine at Columbia University, to become Professor of Medicine of the Johns Hopkins Medical School, the position once held by Sir William Osler.

The chair of Surgery at Johns Hopkins, under the full-time arrangement, is to be occupied by Dr. William S. Halsted, most of whose surgical career has been passed in the Johns Hopkins Medical School, where, since the establishment of the Johns Hopkins Hospital, Dr. Halsted has been its Surgeon-in-Chief and Professor of Surgery.

The chair of Pediatrics will be occupied by Dr. John Howland, who was called a year ago from the Professorship of Pediatrics at Washington University, St. Louis, and appointed physician in charge of the Harriet Lane Home for Invalid Children, this institution being the pediatric clinic of Johns Hopkins Medical School.

Johns Hopkins will become the first medical school to be placed upon the full-time basis in all departments. A grant of \$750,000 has been made to Washington University, St. Louis, and of \$500,000 to the Medical School of Yale University, upon an understanding that they also reorganize their work so as to put their clinical teaching upon a full-time basis.

The full-time scheme is a plan to ensure to hospital work and medical teaching the undivided energy of eminent scientists whose efforts might otherwise be distracted by the conflicting demands of private practice and clinical teaching. The full-time scheme is an appeal to the scientific interest and devotion of the clinician, and it is significant that the first three full-time posts created have been filled by men of conspicuous professional standing, all of whom have made great sacrifices in order that they might enjoy ideal conditions for clinical teaching and investigation.

It should become of increasing consequence to the public that the training of those studying to become doctors should be in charge of the most competent men obtainable, devoting their entire time to this work. Greatly increased efficiency and thoroughness should result, to the alleviation of suffering and the cure of disease.

THE GENERAL EDUCATION BOARD.

DEATHS.

Briggs, Evelyn, Sacramento.
Wilhite, W. J., Modesto.
Reed, R. C. S., Los Angeles (died July 8, 1909).
Seifert, Geo. W., San Jose.
Newlin, Wm. L., died in Los Angeles.
Garcelon, Frank, Pomona, Cal.
Davis, Sheldon F., Pomona.
Palmer, Chas. Thomas, Los Angeles.
Bowles, Geo. R., Ukiah (died in Berkeley, Cal.).
Cuthbert, Wm. L., Long Beach (died in St. Petersburg, Florida).

NEW MEMBERS.

Van Tine, H. C., Boulder Creek, Cal.
Gambotto, C. A., Santa Cruz.
Jamison, Wm. T., Arbuckle.
Hall, L. P., Dixon, Cal.
Russell, Jno. I., Lakeview, Oregon.
Fox, Mearle C., Lakeview, Oregon.

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XII SEPTEMBER, 1914. No. 9

EDITORIAL NOTES

THE OSTEOPATHIC SITUATION.

The JOURNAL has already printed an official statement of the fact that the many "drugless healers" were energetic in their efforts to secure an initiative on the ballot at the next election, their proposed law being one which practically does away with all control of medical standards in the matter of license to practice, and would also allow Osteopathic and other similar schools to grant the degree of doctor of medicine, etc. The "Los Angeles County Osteopathic Association" is at the top of a circular letter dated July 16, 1914, which letter was apparently sent to a number of people with a request that they get signatures to the enclosed petition to the Governor, asking him to do many things. In this circular letter, Dr. Brown, Dr. Pinkham, Dr. Loos and Dr. Buteau come in for special attack and part of the request is that the Governor make other appointments when the term of office of the last three expires in September. Some of the statements in the letter are illuminating, if true. For instance, it states that a committee of the Osteopaths waited upon the Governor to explain "the intolerable" situation—Osteopathic schools not being recognized as medical schools by the Board of Examiners! The committee waited on the Governor and "reports that he gave them a thoroughly sympathetic hearing and unconditionally expressed his disapproval of the action of the majority of the board. He even went so far as to intimate that if they persisted in such attitude, it would mean the unquestionable overthrow of the law at the coming

legislature and the enactment of one which in many respects is less desirable from all standpoints, but which is made necessary by the impossibility of securing a square deal on the part of the regular medical appointees. The terms of three of these unfair members of the board—Drs. Brown, Loos and Buteau—expire September 1st. We believe that the signatures of 10,000 voters of California can be promptly placed in the hands of the Governor, protesting against such actions as have been taken and petitioning the Governor for substantial relief." The Governor is a very well educated man and an able lawyer; he certainly must understand the benefit to the people of having properly educated and qualified medical practitioners to attend them in sickness and accident. But the pressure of "10,000 voters of California" is quite considerable, especially in such a troublous campaign as is at present going on. However, the Governor has so often announced his appreciation of his first duty to the whole people of the state that we may hope for his taking a right attitude.

OUR DELEGATES AT THE ATLANTIC CITY MEETING.

A member of our Society who was present at all the meetings of the Delegates of the A. M. A., has sent in the following statement of his views and observations:

"It has occurred to me that a brief account of the splendid work of the California delegates at the recent meeting of the American Medical Association at Atlantic City would prove acceptable to your readers. As an interested spectator throughout the Thursday afternoon session of the House of Delegates at which the election of officers and selection of the next place of meeting took place, I had the privilege of seeing our representatives play the game and win out on every count.

"Drs. V. G. Vecki, H. Bert. Ellis and Geo. Hare, the California delegates, sat together, taking no active part in the proceedings until the interests of their own state became an issue. When nominations to fill the vacancy in the Board of Trustees made by the expiration of the term of office of Dr. Philip Mills Jones were called for, he was promptly named to succeed himself, only one other nomination being made. The first ballot resulted in a tie. Then our boys got very busy and the second ballot landed our Secretary-Editor in his old berth by a safe margin. This happy result should be and undoubtedly is most gratifying to our Society and to the profession of the state at large.

"The matter of the next place of meeting came up on the report of the Standing Committee on Transportation and Place of Meeting. This report unanimously recommended Chicago for the 1915 meeting, thus placing a heavy handicap on San Francisco. Dr. Vecki immediately moved that the report be amended by substituting San Fran-

cisco for Chicago, and proceeded to speak in eloquent terms of the former's claims. A merry war now developed. Many speeches were made, mostly in opposition to San Francisco, and the sentiment seemed to be rapidly crystallizing in favor of Chicago. When the cause seemed practically lost, Hare of Fresno was recognized by the chair. He had been quite ill the night before and was then so weak that he was compelled to support himself by the back of a chair; but his mind certainly worked clearly and rapidly. With convincing logic he analyzed the situation, pointing out the true significance of the Panama-Pacific Exposition with reference to the subject and emphasizing that the civilized world was ready and waiting to pay tribute to the American Medical Association on that occasion as representing the one factor which had rendered this modern triumph possible. "That is the great reason," he continued, "why this association should meet in San Francisco next year. The honor will be there for you, gentlemen. Take it or leave it. But do what you do with your eyes open." He had sounded the psychologic note at the psychologic moment. The effect was instantaneous. The question was at once put to vote and San Francisco was 'it' by a large majority. Great work, it seemed to me, which the profession can not fail to appreciate. A. B. C."

THE STATE UNIVERSITY ESTABLISHES A GRADUATE SCHOOL AT LOS ANGELES.

Announcement has been made by the Regents of the University of California, that commencing on July 1, 1914, the Los Angeles Medical Department of the University of California would discontinue under-graduate instruction to third and fourth year medical students, and would hereafter confine its work to instruction to graduates of medicine. By taking this step, the Regents have concentrated the work of under-graduate instruction of the State University at Berkeley and at San Francisco; the premedical work of collegiate grade, and the first two years of the medical course proper being given at Berkeley, and the clinical work of the last two years being carried on at San Francisco at the Affiliated Colleges.

The decision of the Regents to make a school for graduates of medicine of the Los Angeles Medical Department was taken upon the recommendation of the faculty at Los Angeles, it being felt that it would be an unwise economical duplication of effort for the State University to carry on under-graduate instruction, under present conditions, at both San Francisco and Los Angeles, since the income which could be turned to the Medical Department of the State University at this time was limited.

The dispensary clinics and the hospital facilities of the Los Angeles Medical Department are very large, and it was believed that the opportunities for clinical work were sufficiently great to warrant the establishment of a school for graduates of medicine, the aim of which would be to permit

members of the profession who wish to get increased medical experience and skill, to have an opportunity to do this work in the Southwest. It seems to us that this arrangement is one which at the present time is in line with the best interests of medical education in California, and we trust that this new departure will meet with the success which it deserves. The Dean of the under-graduate department of the Los Angeles Medical Department, Dr. W. Jarvis Barlow, having resigned, the Regents have elected Dr. George H. Kress, Dean of the new graduate school.

MILITARY SURGERY.

The Journal of the A. M. A. in its issue for August 1, printed an editorial review which, in view of present conditions in Europe, was singularly timely. What awful things may be happening in Europe at the time of writing, no one can imagine, but there is every present reason to believe that conditions will be very much worse at the time when this number of the JOURNAL comes out. Because of the significance of the figures given in the Journal's editorial, we take the liberty of reprinting nearly all of it. The book referred to is by Octave Laurent, "*La guerre en Bulgarie et en Turquie*":

At the beginning of the Balkan war, Bulgaria had a population of about 4,300,000, and put into the field more than 500,000 soldiers. In the first war 30,000 were killed and about 53,000 wounded. In the second war 16,000 were killed and 62,000 wounded. Thus one-third of the effective force of the entire army, or 3 per cent. of the population of the country, were either killed or wounded. The deaths reached one in twelve of the whole army, one in four of the wounded and one in a hundred of the entire population. These figures serve to give some idea of what modern war means.

In spite of the thorough training of the soldiers and the years of service to which they had been subjected, the old proverb that it takes much more than his own weight of lead to kill a man in battle held true during this Balkan war. Altogether Bulgaria used during the last war 32,000,000 rifle-bullets and 27,000,000 shrapnel balls, so that scarcely more than 1 in 200 bullets found, in the expressive phrase, its human billet. The artillery was responsible for more than half of the deaths, but less than one-fifth of the wounded.

Owing to their high velocity, bullets from the modern rifle often make wounds with surprisingly few serious consequences. Laurent reports cases in which a ball traversed the brain, pierced the chest or penetrated the abdomen, with comparatively mild results. In some of these apparently dangerous cases the wounds healed promptly without any disturbing consequences or symptoms. Sometimes bones were perforated with only insignificant traces of the passage of the bullet, especially when it traversed the epiphyses. On the other hand, the fractures of the large bones were numerous and complicated and deserve special study. The mortality was distributed as follows: 55 per cent. due to wounds of the head; from 35 to 40 per cent. to wounds of the trunk, and 5 per cent. to wounds of the limbs.

Quite contrary to the usual supposition, there were extremely few serious wounds of the ab-

domen which called for laparotomy in the hospitals. There was a much larger proportion than might have been expected of aneurysms and especially of nerve-lesions of various kinds. Direct rifle-bullet wounds were often almost absolutely innocuous, and wounds of the head as a striking feature were followed with extreme rarity by serious deformities of the face. Amputations were rare, less than 1 per cent. of all cases treated in the hospitals requiring it, while trephining was relatively much more frequent. The results of a second operation under chloroform of wounded soldiers whose wounds had become infected were always very discouraging.

Summing up the results, Laurent says that during the single month of July, 1913, 150,000 men were killed and wounded on both sides, and of these more than half, at least 80,000, fell on the banks of the Bregalnitsa in the six days from June 30 to July 5. He quotes with approval the remarks of a commentator on these figures who says:

"If you put a zero behind each of these numbers you will have some idea of the effective strength of the armies and the losses that must be presumed to take place in any war which would to-morrow set the armed forces of any two first-class powers of Europe on the fighting line before each other. There would be not less than 1,500,000 dead and wounded in the course of the first month."

WAR AND ITS ROMANCE.

We are all so stunned at the happening of the impossible, the being forced to think of the unthinkable, that it is difficult even to imagine things in their proper proportions. Hell has certainly grabbed all Europe for its very own. Psychologically, it is of sad enough interest to see how quickly peaceful people, going through life in the most friendly relations, suddenly become crazed with the lust for blood; for killing; for murder by wholesale. It is also of interest, and of profound significance, that millions of men can be moved about a large area, cared for, fed, guided, herded hither and yon, and not a word of their actual location, movements or doings reach the knowledge of the outside world except such fragments as the leaders of these millions permit to escape. It would have seemed quite impossible so thoroughly and completely to bottle up all the avenues of escape for news; but it was done and is being done. The control of the masses by the few seems to be absolute; but will it always last?

THE EXPOSITION AND THE WAR.

The Directors of the Panama-Pacific Exposition have announced most positively that the Exposition will open on the date scheduled and that there is not the slightest question of postponing it on account of the European war. They state that nearly all the exhibits which had been promised will be in place on time and that the success of the Exposition is in no way a matter of doubt. It is quite probable that, if the war continues, a great many people will come out to see the Exposition and travel through the western part of their own country, who might otherwise have gone to Europe.

ORIGINAL ARTICLES

THE INTIMATE RELATION OF ORTHOPEDIC SURGERY TO NEUROLOGY.

By H. W. WRIGHT, M. D., Santa Barbara.

The stimulus to the production of this paper comes from a recent experience with several interesting and instructive cases which came under the author's observation in one of the busiest orthopedic dispensaries. Neurology and orthopedic surgery have always had much in common, but as time goes on and neurological diagnosis becomes more exact the communal interest of the two branches of medicine becomes more important. In the dispensary where the writer had the privilege of working hardly a week passes without a patient who needs a thorough neurological examination dropping in, and judging from the number of cases referred from a nearby neurological hospital, orthopedic conditions are as frequently met with there. Such an experience cannot fail to convince one of the necessity of the orthopedist having a thorough knowledge of organic and functional neurology and a habit of making a careful and complete neurological examination in every obscure case.

It will not do to take the attitude that any patient showing signs of organic lesion of the nervous system belongs to the neurological specialist, and therefore ceases to be interesting. Many such patients need orthopedic treatment, and the particular treatment depends very much upon the neurological examination and must be interpreted by the orthopedist himself in order to treat the patient effectively. Thus might time and suffering be spared to many patients who are now shifted from one specialist to another, because neither has sufficient interest in, or knowledge of, the other's branch of work to make a complete examination. The patient does, indeed, need specialistic treatment; but, first of all, a correct diagnosis is essential and a correct diagnosis is most surely obtained by the man whose field of vision is not limited to one organ or region of the human anatomy. We have in our large cities unlimited clinical material and it is only the lack of co-operation between the different clinics, hospitals and medical societies that prevents the modern specialist from being a well rounded man so far as diagnosis is concerned.

Perhaps there is no disease in which more confusion of neurological with orthopedic symptoms and indications for treatment can exist than hysteria. This fact has nowhere been so graphically illustrated as in the monograph by Dr. Newton Shaffer, entitled "Hysterical Joint Affections," and published in 1880. Numerous cases are therein detailed and show that the author had a good grasp upon neurology, as well as upon his own specialty.

Hysteria may simulate any disease, and here

even the expert may be fooled. Hysterical joint symptoms and contractures if treated orthopedically are quite apt to be aggravated, to become permanent or indefinitely prolonged because the treatment has increased the attention of the patient to the part involved and has done nothing to correct the neuropsychic functional defect which is the cause of the symptoms.

Such diseases as syringo-myelia, disseminated sclerosis, Freidrich's ataxia, chronic exudative inflammations of the spinal cord membranes and progressive muscular atrophy come to orthopedic dispensaries because of the motor disability accompanying these lesions. If a thorough neurological examination is not made intelligent treatment is impossible, and intelligent consultation with the proper specialist unlikely. Spinal cord tumor is not an infrequent disease at all ages and can often be mistaken for incipient Potts, neuritis, sciatica or "spastic paralysis" by the unpracticed eye.

In the course of a year a large number of little sufferers from Erb's type of birth palsy pass through an orthopedic hospital or dispensary. The majority of them do not recover either spontaneously or after many months of electricity and massage, yet nothing more is done for them. From a surgical standpoint they are being quite neglected by the orthopedic surgeon, and why? Because he is not sufficiently prepared either in his knowledge of the anatomy of the brachial plexus or of the technic of its surgery. These cases are numerous enough to go round between the general surgeon and the orthopedist, and generally come to the latter first anyway.

On the other hand, taking a view from the other side, many orthopedic conditions cause symptoms in the nervous system, which taken by themselves and observed by one entirely interested in neurology can simulate a serious organic disorder of the central nervous system. Sciatica is frequently diagnosed when the sciatic symptom is an indication of hip-joint or sacroiliac disease. Most distressing sequelae of peripheral neuritis, hemiplegia and paraplegia in their various forms are seen by the orthopedist because the neurologist has not been acquainted with the mechanical measures indicated to prevent deformity in any affection involving muscles and joints.

There are also many obscure functional disorders in the "neurasthenic" group, which depend largely upon static defects, especially the condition described and well elucidated by Hibbs in his article on: "muscle-bound foot."

To illustrate the theme of this paper, the following cases are submitted. For this privilege I am indebted to Dr. R. H. Hibbs of the New York Orthopedic Hospital and Dispensary:

Case 1. A girl of 12 years was brought to the dispensary because of a gradually increasing weakness of the muscles of both lower and upper extremities. This began shortly after being frightened and exposed to cold and wetting during a fire in her home. Examination showed pronounced atrophy in arms, with almost complete paralysis in all the limbs. There was increase of the right knee jerk, double ankle clonus and Babinski reflex.

No sensory disturbance nor any sign referable to the cranial nerves. An organic lesion of the cord was diagnosed and the patient referred to a neurological hospital. There she was operated upon and an extra-dural tumor removed at the level of the eighth cervical and first dorsal segments. Patient has gradually improved and two months after operation was able to walk. Permanent paralysis of the upper extremities was doubtless prevented in this case by early operation.

Case 2. A boy of 4½ years had had pain in back of neck for five months. Was treated for rheumatism. Physician referred the case to a dispensary because he suspected cervical Pott's disease with paraplegia, the gait having gradually become feebler and fever having been observed.

Examination showed very unstable station and gait, absent knee jerks, sluggishly reacting pupils, nystagmus; Babinski on right side and marked ataxia in hands.

After being referred to a neurologist an examination of the eye grounds revealed papilloedema on each side. A diagnosis of cerebellar tumor was made and the lateral ventricles were aspirated through the corpus collosum, eight ounces of fluid removed. The patient improved for a time, but soon relapsed and remains unimproved.

Case 3. A girl of 13 years complained of headache for two years. Was treated for eye strain by special glasses. Headache improved, but eyesight became more defective. She came to the orthopedic dispensary because of feebleness and uncertainty in gait. Examination showed increased knee jerks and hemianopsia. After being referred to a neurological hospital optic atrophy was found and a diagnosis of tumor at the base of brain was made. This was not considered removable and therefore the lateral ventricles were punctured through the corpus collosum. The vision rapidly improved thereafter and the patient's gait likewise became better. She was discharged much improved, but three months later vision became again more dim and this condition is progressing.

Case 4. Spinal cord tumor, simulating spondylitis. A girl of 14 years after an attack of measles two years previously gradually became stooped-shouldered and rigid in the dorsal spine. She also occasionally had noticed a numbness in left foot and fingers with tendency to involuntary contracture of the fingers of left hand. Later pain down the inner side of left arm appeared. Examination of spine showed a smoothly rounded kyphos, involving the upper half of dorsal spine, with rigidity in same region; also a slight lateral curve in the same region.

All tendon reflexes were exaggerated; there was double Babinski and ankle clonus. There was also weakness of the muscles of left foot and hand and slight atrophy of the left calf muscle and the thenar muscles of left hand, together with diminished sensation to touch, pain and temperature in left arm and hand and in left leg and foot; pain down left arm was frequently complained of, but was not constant. No symptoms referable to the cranial nerves; abdominal reflexes absent. There was a fine tremor in left hand on extension. The patient became rather rapidly more feeble in her limbs and a diagnosis of intra-medullary cord tumor was made by the neurological consultant. After being transferred to the neurological hospital the patient developed mastoiditis and was operated upon for this. Soon her cord symptoms began to improve and a spinal brace was applied. With this she was soon able to walk about comfortably. Four months later she was found to have exaggerated reflexes and double Babinski and ankle clonus, but less disturbance of sensation than formerly; however, there was still a diminution to pain, temperature and touch in left lower extremity. Her feet were spastic, but there

was no noticeable atrophy anywhere. She had no pain and was up and about every day, walking with a cane and wearing a spinal brace. This patient was now considered as a case of chronic osteoarthritis of the spine and her spinal cord symptoms were thought to be due to pressure of bony growth on the nerve roots and cords. X-ray showed only a slight thickening of bone lateral to the bodies of vertebrae. She tires easily, and after being about a few days will take to bed again for a time to recuperate and later walk about better. On August 5th and 12th she was prescribed thymus gland grains X, and this treatment was continued for two months, but patient gradually became more incapacitated and she was again referred to the neurological hospital, where this time a diagnosis of cord tumor was made. Primary operation of laminectomy and incision of dura was done and patient improved. She is now awaiting the extrusion of a probable intra-spinal tumor.

Case 5. A case of hysteria resembling focal disease of the spinal cord. A girl of 18 years. No history of nervous or mental disorder in antecedents. Her brother is of neurotic type, a stutterer and poorly developed. The girl was always considered "nervous" and self-conscious, is subject to dreams and fainting spells, but has given no other psychic evidence of hysterical makeup. Shortly after an operation for appendicitis she was thrown from the steps of a trolley car, striking her right knee, and although there was no serious injury she remained in bed a few days. Since then her right knee had been painful and she kept it flexed, walking upon her toes, and her general nervousness had increased. On admission there was a spastic contracture of the flexors of the right knee joint and of the calf muscle, which could be overcome by persistent manipulation. This caused some, but not unbearable, pain. No pain complained of when at rest. No atrophy.

The right knee reflex was overactive; there was pseudo ankle clonus; no Babinski. Lateral nystagmus was present in each eye. There was a very coarse type of intention tremor in the right hand; none in the left. This tremor varied in degree and was much less when patient was unconscious of observations. There was anesthesia in right foot and leg; later on, in left. This anesthesia shifted about from time to time, but was found constant in one area of right foot; its distribution did not correspond exactly with any segment of the cord. In applying "Hoover's test," i. e., having the patient flat on her back and asking her to raise the normal leg with knee extended, the contractions in the other knee disappeared. Blood and urine were normal. The patient retained her urine for long periods and secreted very little, catheterization produced only four ounces after 48 hours. After discontinuing catheterizing she voided naturally. Mentally she was cheerful; she often laughed immoderately. She remained under observation six weeks without much change in the above symptoms. The left tendon Achilles was lengthened, but this caused no change in patient's knee contracture or gait. At times, however, her gait was normal, but never when she was conscious of observation. Toward the end of her residence in the hospital she was allowed to go out alone for short walks. She fell once or twice, but sustained no injury. She was also given thyroid and thymus gland for three weeks in full dosage without any benefit. Finally the nature of the patient's disorder was frankly explained to her in simple language, which she seemed to comprehend and also to be quite relieved by the explanation. She was urged to leave the hospital and keep away from dispensaries and doctors. She had been to several before admission here. She was advised to try to lead a normal active life in spite of the present symptoms and was assured that these would gradually disappear.

THE TREATMENT OF GASTRIC AND DUODENAL ULCER.*

By RENÉ BINE, M. D., and EMILE SCHMOLL, M. D.,
San Francisco.

Ever since pathologists began to insist upon the universal prevalence of tuberculosis, clinicians have tried to perfect their methods of diagnosis of this disease in order to recognize it in its incipency. This has necessarily resulted in an increase of clinically diagnosed cases, many of which are labeled "old," "healed," or "latent"; others "active," "progressive," etc. Similar conditions apply to the disease now under discussion. It is less than 100 years since pathologists began to clearly differentiate between ulcers and cancers of the gastroduodenal region, and ever since then anatomists have shown that active ulcers or cicatrices are found in 3% to 5% of all autopsies. With the advances of modern surgery and an increasing number of laparotomies, ulcers have been demonstrated and found to explain the symptoms in many otherwise obscure cases. This has stimulated physicians to more accurate observation and study of gastro-intestinal patients so that we now find ulcers diagnosed much more often than they were even 10 years ago.

A perusal of textbook descriptions gives one the impression that the diagnosis of gastric or duodenal ulcer is a fairly simple matter, depending upon the presence of pain, vomiting, hematemesis, hyperacidity, occult blood in the stools, etc. It is true that with these symptoms one is often justified in assuming the existence of an ulcer. But much more often we see patients in whom only pain and hyperacidity, with or without vomiting or pylorospasm, lead us to question the correctness of such a diagnosis. We even frequently see or hear of patients in whom all the classical symptoms of active ulcer are present, but where at operation no such lesion is found; and in addition, where the removal of a chronically diseased appendix or of a diseased gall bladder is followed by a complete cure. It must be remembered that because at operation ulcers are not always found, their absence is not proven. They vary considerably in size and surgeons frequently experience difficulty in locating ulcers even if a half-inch in diameter if they are not indurated and are without adhesions. In some instances pin-hole ulcerations have been found at autopsy accounting for fatal hemorrhages for which no cause could be found on the operating table. Cases are also recorded where though the diagnosis seemed certain and where deaths resulted from hemorrhage, macroscopically and microscopically no ulcer could be found at autopsy.

It is because of this great difficulty in the diagnosis of gastric and duodenal ulcer that clinicians find it hard to correctly estimate the value of any treatment. A goodly number of cases undoubtedly recover without any form of treatment, if we are to rely at all upon the frequency with which healed ulcers are shown as

* Read before the San Francisco County Medical Society, April 1914.

autopsy findings; on the other hand, it is not improbable that a number of clinical cases reported cured by mild measures were really sufferers from other diseases.

How then are we to decide for ourselves? In the series here presented, we have included only those cases in which we feel certain of our diagnoses, these having been substantiated at operation or autopsy, or more or less confirmed by prolonged observation.

The next question that we must ask ourselves is: How much can we expect from any method of treatment, and what shall we call a cure? We cannot consider any method successful unless it brings about an absolute freedom from all subjective symptoms as well as the disappearance of all objective signs of ulcer activity. This result is frequently obtained by different methods, medical and surgical. But while we have all seen apparent cures, only too often after a period of months or years, recurrences are apt to drive us to ask in desperation—are ulcers ever permanently cured?

Of late the tendency has been to consider gastric and duodenal ulcers, not as primary conditions but as results of other acute or chronic disturbances, such as chlorosis, vagotonia, chronic appendicitis, chronic constipation, gall stones, and even status asthenicus. These troubles, it is assumed, cause spastic contractions of the gastric musculature, contraction and obstruction of the local blood vessels with ischemia and digestion of the mucosa and ulcer formation. It is, however, difficult or impossible in most instances to decide whether lesions found in the gall bladder or appendix are the cause of the ulcers, or whether the latter, the result of a congenital or acquired disposition to irritative gastric disturbances, have given rise to them.

We feel that in many of our cases we may speak of cures even though years later ulcer symptoms have reappeared. It is most probable that the ulcers really heal, but that new ones occur because of the primary disposition itself, with or without some new extra-gastric factor.

The following cases are cited as examples:

Case 1. Mr. S., age 55. In 1906 typical symptoms, hunger pain, periodicity, hematemesis, tarry stools, hyperacidity. On an exclusive milk diet got entirely well in about two months and remained well until Christmas, 1913, when the same symptoms recurred. Under Lenhartz treatment complete recovery ensued and the patient has been apparently entirely well for the last two months.

Case 2. Mr. P., age 55. Had occasional attacks of what he called "bilious spells," during which large amounts of clear fluid were vomited, indicating pylorospasm, combined with symptoms of hyperacidity. These attacks would last but a few days and would occur at irregular intervals. Except for obstinate constipation, had been particularly free from symptoms for a number of years until February 1st, 1914. On this date, while traveling on a train, began to vomit and had three attacks of hematemesis, losing one to one and one-half pints of blood with each. Came under our observation several days later and was kept three weeks on Lenhartz diet. The pain increasing and the blood picture becoming constantly worse, operation was decided upon and gastroenterostomy

performed. Patient died of acute dilatation of the stomach. Autopsy showed completely cicatrized ulcer of duodenum just below pylorus.

Case 3, details of which will be given below, recovered from typical ulcer and remained well for eight years, when all symptoms recurred.

Case 4. Mrs. P., age 34, always delicate. At 14, began to have vomiting spells which yielded to a liquid diet. Married at 18. At 24, vomiting, gastric distress, periodicity to pain. July, 1911, to May, 1912, in a hospital in Cleveland, being treated for hemorrhages from stomach, where diagnosis of possible cancer was made. Recovery complete. First seen by us April, 1913, because of recurrence of vomiting spells. Dietetic treatment instituted, but patient did not persist, having yielded to Christian Science influences. September, 1913, fell and sprained ankle; this kept her at home for some time, during which period was subjected to considerable worry. October, 1913, sudden recurrence of nausea, with vomiting of at least a pint of blood. Modified Lenhartz regime. Complete recovery in about 6 weeks. Patient is well to date.

Case 5. Mr. R., age 31. In 1908, pain, periodicity, hematemesis and blood in stools. Modified Lenhartz treatment, 3 weeks in bed; recovery. In June, 1912, began to have pulmonary hemorrhages. We found him with an advanced tuberculosis. He rapidly developed signs of intestinal obstruction and general peritonitis, dying in spite of operation. Autopsy revealed perforated tuberculous ulcers of bowel, acute tuberculous lungs and a large scar of old healed duodenal ulcer.

SURGICAL INDICATIONS.

The treatment of gastric and duodenal ulcers varies with each case. With a few exceptions, the treatment is a purely medical one. We feel that while the surgical treatment has been advocated with great enthusiasm in recent years, the results that we have seen have fallen short of our expectations, and we are becoming more and more inclined to conservative measures. Surgery, to our minds, is absolutely indicated:

1. When there is stenosis due to cicatricial constriction of the pylorus or duodenum,
2. When symptoms of tetany are present,
3. In acute perforation,
4. When persistent bleedings occurs,
5. Perigastric abscess.

As relative indications for operative interference we consider:

1. The failure of medical treatment after 3 to 6 months thorough trial.
2. The social status of the patient, which may preclude prolonged medical treatment and observation.
3. The suspicion of cancer, though clinically this does not very often occur, and with the use of the X-ray and modern laboratory methods should become more infrequent. (As a matter of fact, the surgeon finds it frequently impossible at operation to exclude malignant degeneration in ulcer lesions.)
4. Interference with gastric motility, or severe pain due to perigastric adhesions.

We do not agree with those writers who look upon a diagnosis of an hour-glass stomach as indicating surgery, for in our experience this condition seldom gives symptoms of stenosis or produces

stasis, and many cases are clinically proven non-organic.

In cases of gastric tetany, operation should be performed as soon as the diagnosis is made, unless the stenosis causing it be due to spasm.

Medical treatment is usually of no avail; surgery frequently relieves it immediately or in a short while. Rodman has again drawn attention to this interesting condition, recently reporting a case where tetany supervened 11 days after a perfectly satisfactory drainage operation had been done.

Case 6. This patient was seen in the service of Professor Krehl of the University of Heidelberg, May 6, 1907. Male, age 26. For 17 yrs. off and on, attacks of pain, vomiting and sour regurgitation, alternating with periods when gastric function was apparently normal. Attacks having become more frequent, patient had been washing stomach daily for 18 months. Loss of weight had been noted for some time, patient having lost 7 lbs. during the week previous to admission to the hospital. Middle of April, patient stated, everything got black before eyes, he was stiff all over, fists clenched themselves, heard all that was said about him, but could not do anything himself.

Examination: Heart and kidneys O. K., moderate emphysema, stomach dilated and ptotic, peristalsis visible: 3500 cc. of fluid removed with tube. On fasting stomach: total acid 23, free HCl 8, butyric acid present, no lactic. After evening meal: total acid 78, free HCl 27. The diagnosis of benign stenosis was made, the absence of blood in vomitus or stool being against active ulcer; but it was thought probable that the first symptoms experienced had been caused by one. The acid figures were against cancerous changes. Gastro-enterostomy was to have taken place on May 7th. On the evening of May 6th, an attack of tetany occurred, in which patient fell on his head and death ensued.

When first seen the classical symptoms of tetany were all present. Under Lenhartz treatment the attacks of tetany ceased, all signs but the Chovstok disappearing, and the gastric stasis was almost entirely relieved. An occasional occurrence of blood in the stools, with a persistent hyperacidity, show, however, that the ulceration is not cured and operation has therefore been advised and will soon be carried out. We may state that operation was not insisted on at the outset because of the absence of an anatomical obstruction and because the first attack had yielded to medical treatment.

MEDICAL TREATMENT.

The medical treatment of this condition must needs vary with every patient. Many dietetic cures have been advocated, their underlying principle being to obtain, as nearly as possible, absolute rest for the stomach. Many authors advocate and others tolerate ambulatory methods in the treatment of mild cases. It has been our custom to absolutely refuse to treat cases of this sort unless they are prepared to follow a period of enforced rest. We keep our patients in bed for at least two weeks after the disappearance of pain, hyperacidity and bleeding. In so far as the dietary regime is concerned, we are ardent advocates of the Lenhartz plan of feeding, with some modifications. In formulating his method, Lenhartz was actuated by the belief that a too strict enforcement of a rigid and insufficient diet, with the resulting anemia, seriously impaired the recuperative powers of the patient. He furthermore felt that the ulcer was partly kept up by the hyperacidity and pylorospasm, and that the binding of acid secretion by the food would bring about a state of rest for the stomach. The Lenhartz diet is detailed in but comparatively few of

THE LENHARTZ DIET SCHEME.

	DAYS AFTER LAST GASTRIC HEMORRHAGE.																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Eggs (beaten up)...	2	3	4	5	6	7	8	8	8	8	at	the	most											
milk (cold and taken with a teaspoon)...	200	300	400	500	600	700	4 beaten up	800	900	1000	1000	1000												
Sugar	c.c.	c.c.	c.c.	c.c.	c.c.	c.c.	4 boiled	c.c.	c.c.	c.c.	c.c.	c.c.												
Scraped meat.....			20 g.	20 g.	30 g.	30 g.	twice	twice	twice	twice	twice	twice												
Milk and Rice.....						35 g.	35 g.	35 g.	35 g.	35 g.	35 g.	35 g.												
Zwiebach							100 g.	200 g.	200 g.	200 g.	200 g.	300 g.												
Raw ham.....							20 g.	40 g.			40 g.	60 g.												
Butter											50 g.	50 g.												
Calories	280	420	637	777	955	1135	1588	1721	2138	2478	2941	2941	3007	3073										

Autopsy: Healed pyloric ulcer with stenosis; dilatation. (No skull injuries.)

Case 3. A remarkable case of ulcer of the pylorus combined with tetany was seen 7 mos. ago. Female, age 39. Had her first stomach symptoms 10 years ago, that is, periodical attacks of typical hunger pain, complicated by pylorospasm and vomiting of large amounts of fluid. During one, profuse hematemesis, establishing the diagnosis of active ulceration at pylorus. With attacks of pylorospasm, typical tetany occurred, the latter symptoms disappearing as soon as the pylorus became patent. After 2 years of this trouble she recovered completely and remained well for 8 years. Six months ago she came under our observation with the identical symptom complex above described. Hyperacidity, hypersecretion, stasis, and a motor insufficiency of the first degree associated with occult blood in the stools, again established the diagnosis of ulcer at the pylorus.

the standard works on gastro-intestinal disease or on dietetics, and is therefore given here in its original form for the sake of completeness.

The treatment of course varies according to whether or not there has been recent hemorrhage. In those cases where the diagnosis is made in the absence of bleeding, we employ the following routine. We give the patient daily a mixture consisting of 1000 cc. milk, 500 cc. cream, and 8 yolks of eggs beaten up, about 60 cc. every half hour during the day, the remainder during the night whenever the patient awakens. It is taken at room temperature or slightly warmed, herein differing from Lenhartz' original scheme, for the reason that we have occasionally seen hypersecretion when the mixture was given iced. The pain

diminishes usually on the first day and is frequently absent by the third. We consider this relief of pain as one of the important diagnostic signs of ulcer, and question the diagnosis and look for complications if the response does not occur in the usual way. The diet is continued for at least four to five days, during which the patient usually loses one or two pounds in spite of its high caloric value. After this we increase the diet in a manner differing from that of Lenhartz, who gives scraped meat and ham very early in his treatment. We exclude meat entirely for two reasons: First, because its presence interferes with the occult blood reaction, upon which we always depend as an indication of the success of our method; second, because we believe that meat produces an increased secretion of gastric juice. As a matter of fact, we try to keep our patients for three to six months on a lacto-vegetarian diet, and to the strict enforcement of this rule we attribute the cures we have been fortunate enough to have.

After the fifth day we increase our diet by adding soft boiled or scrambled eggs, gruels, milk, rice, zwiebach or milk toast, butter, cottage cheese, and occasionally, as an exception to the above principle, we permit gelatin.

After two weeks, if no complication occurs, thoroughly pureed vegetables, noodles and macaroni may be given. Later on the vegetables are well cooked, but not necessarily given in puree form. After three months fish and fowl are permitted. Uncooked vegetables and fruit are not given for six months.

The feces are examined weekly during the entire period.

Absolute rest for the stomach applies to motility as well as to secretion. To obtain this result, many physicians resort to rectal feeding, employing this method as a routine and preliminary to all other forms of feeding. We know, however, from experimental work that under these conditions complete rest for the stomach is not obtained, and that under certain conditions the stomach shows peristalsis at regular intervals, this being very frequently started by the introduction of nutrient enemata. On the clinical side we have numerous proofs of this, and have seen several cases where pylorospasm and vomiting of large amounts of fluid persisted for days in spite of absolute rectal feeding.

Case 7. Mrs. H., age 37, was seen in consultation 6 years ago in an attack which had persisted 3 days and during which she had vomited about 5 pints of bloody fluid. At the time of consultation her hemoglobin was 18%, and the vomiting of blood had kept up in spite of the use of the customary measures plus rectal feeding. The principle of the Lenhartz treatment, which we advocated, was accepted, rectal feeding stopped and mouth feeding begun. Vomiting and bleeding ceased and the patient made an uneventful recovery.

Case 8. Mrs. M., age 27, was seen October 4, 1913, in consultation, because of persistent vomiting with blood and severe pain in epigastrium, symptoms which had persisted for 3 weeks in spite of rectal feeding and absolute rest in hospital. (The patient, a rather nervous woman, had suffered from

rheumatism in 1901, and, shortly afterward, from a severe fall with concussion of the brain. Appendix had been removed in 1911; following this, normal confinement, but had always been nervous. July, 1913, brachial neuritis.) A diagnosis of gastric ulcer was made, and rectal feeding continued. Vomitus showed acidities varying from 20 to 40. X-rays taken on October 14 showed slight dilatation of stomach, no ptosis, and other findings which were indicative of ulcer. All symptoms aggravated in spite of bismuth, atropin and starvation. Lenhartz diet instituted on the 18th, but vomiting persisted. On 21st, further consultation, and it was decided to have a surgeon on the following day. That evening, at our suggestion, patient was given soft solids which were well borne; so that from that day on, a more or less soft diet was tried, according to the daily symptoms. Except for a persistent tachycardia, patient left hospital in the latter part of November in good condition. There has been no recurrence of ulcer symptoms to date, and tachycardia has disappeared.

For these reasons we have practically given up the use of rectal feeding, which furthermore can at the best supply but a very small amount of nourishment to an already debilitated organism. The lengthy discussions which we continually find published as to the best form of enema are but proofs of their failure to supply the nutrient demanded. We never have seen good results in cases where exclusive rectal alimentation was kept up for any length of time, though it is true that there are many such reported in the literature.

During and after the period of strict dieting, various other measures are employed to assist in the cure. In the absence of bleeding, hot applications to the abdomen are efficacious and frequently afford considerable relief of pain. Whether by active hyperemia, they produce a more rapid granulation of a chronic ulcer, is a point on which it is impossible to obtain conclusive evidence.

In many cases the pain is best relieved by the frequent administration of food, this being most successful when the so-called "hunger pain" is present. If the Lenhartz or some of its modifications, because of their high fat content, aggravate the pain, an exclusive milk diet may be tried. Atropin or belladonna, the former hypodermatically, or the latter by suppository, may be used to prevent excessive HCl secretion or to relax the pylorus, our preference being for atropin hypoderm., grs. 1/150 to 1/100 t. i. d. or oftener. Of the alkalies, which not only relieve pain by neutralizing acid, but which also reduce gastric secretion, we prefer to give sodium bicarbonate combined with magnesia, the latter acting as a laxative and counteracting the gas. Milk of magnesia is often well tolerated. After a rather lengthy experience, we have practically given up the large doses of bismuth recommended by Kussmaul and Fleiner—that is, doses of 10 to 20 gms., having seen some rather distressing conditions following their administration.

Case 9. Mrs. G., age 58. First stomach symptoms 5 years ago. When patient came under our observation she had the typical chain of symptoms, hunger pain, vomiting of blood, etc. Lenhartz diet with bismuth 4 gms. t. i. d. Pain and vomiting stopped, but two weeks later patient felt a sudden sharp pain on right side of abdomen, this being associated with a marked rise in temperature, leucocytosis, and peritoneal symptoms. At the site

of the pain a tumor the size of a small apple could be located; it was easily movable and apparently in the transverse colon. The differential diagnosis lay between a cancer of the transverse colon with sudden obstruction, or a fecal impaction due to the large doses of bismuth. Notwithstanding brisk purging over a period of 6 days, the size of the tumor did not vary, although the acute symptoms disappeared. The patient was discharged some time later entirely well, except for the presence of the tumor. Two months later the patient discharged a lump of bismuth the size of a small apple, and the tumor mass had vanished.

Case 10. Miss M., age 35. In this case large doses of bismuth were employed, resulting in fecal impaction, which was only relieved by manual evacuation of the rectum.

With silver nitrate we have no experience. One of our patients has very curiously discovered that nothing gives him the relief which is afforded by 5-gr. doses of aspirin, so that he has entirely discarded his soda and bismuth for the former drug. In cases of pylorospasm, olive oil may be tried and occasionally relaxes the spastic condition of the pylorus. This is given, as suggested by P. Cohnheim, one wineglassful at a temperature of 100 degrees F. early in the morning before breakfast and a tablespoonful before luncheon and dinner; or, as he suggests, in an emulsion with the white of egg and almond oil. We have used albolene or liquid petroleum in one instance where the patient rejected the olive oil. This, of course, is not nourishing, but is soothing and acts as a laxative.

TREATMENT OF COMPLICATIONS.

(a) *Hemorrhage*: This in itself usually contraindicates immediate operative interference. In the first place, in less than 1 per cent. of cases do the hemorrhages result in death, though we have witnessed such cases in hospital practice. Furthermore, when laparotomy has been performed, the bleeding spot is seldom found, and because of the attendant shock a prolonged search can not be made. Operation has given over 60 per cent. mortality. As a rule the bleeding stops of itself. The first thing to do is to put the patient to bed, at absolute rest, flat on the back, elevating the foot of the bed so as to counteract the cerebral anemia. Adrenalin, it is claimed, in 0.3—1.0 cc. hypo. seems occasionally to act as a hemostatic. We never use it on account of its tendency to raise blood pressure, which we prefer to avoid. Pantopon (employed in preference to morphin, which produces pylorospasm) must be administered in small doses if the patient be nervous or anxious—best combined with atropin in order to diminish gastric secretion. If the loss of blood be great and the patient show signs of collapse, rectal administration of fluid may be begun. Salt solution can always be had, and the Murphy drip method should be employed if possible. Adrenalin may be added to it if desired, if the bleeding has stopped. If the bleeding continue, salt solution may be given intravenously, 5 cc. of a 10 per cent. solution for its hemostatic action, or a larger amount of the normal solution. Direct transfusion may have to be resorted to, though even this method may give but very transitory results. Furthermore, the lat-

ter cannot be considered a real emergency method, as it requires a complicated technique and elaborate preparation. In hospitals, however, its application is simpler. We have had no experience with gelatin, and though we prefer blood serum (horse), which nowadays is more available, we have tried it in one case without any result. We do not feel that much can be expected from it when we are dealing with ulcerations of a large vessel, though in persistent oozing in subjects with general tendency to bleeding, we should not hesitate to try it. Gastric lavage with ice cold water, as advocated by Fleiner, or a liter of water containing 2 gms. of calcium lactate, as recommended by Matthieu (to remove food or blood clots which by their irritant action keep up the vomiting and hemorrhage), may be tried with advantage. We have practiced gastric lavage in a number of instances with favorable results, and feel that the danger of perforation is practically *nil* if ordinary skill be employed. Kaufman is an ardent advocate of gastric lavage, and to his article on the treatment of gastric ulcer we refer those interested in a discussion of the pros and cons of this form of treatment. A light ice-bag may be applied to the epigastrium or over the bleeding area if it be known. We have used escalin (a paste made of finely powdered aluminum and glycerin) in a small number of cases, in the doses recommended by Klemperer, with apparently good results. We have not seen any bad effects from its use. Direct compression of the bleeding area by means of a tourniquet on a pelotte, or by a pelotte fastened by a towel, as advocated by Kelling, is a method that we have never employed; nor have we ever attempted, as he advises, inflating the colon with air in the hope that the transverse colon may thus press against the pylorus or duodenum (!).

In so far as the diet is concerned, we feed immediately and give 200-250 cc. of our milk-cream-e-g mixture on the first day, in teaspoonful doses every 15 minutes. In these cases we give the mixture iced and gradually increase the amounts until we have gotten back to the scheme above discussed.

(b) *Perforation*: If acute, the treatment is purely surgical, and as such need not be discussed here. If the perforation be chronic, expectant measures may suffice, as the following case will illustrate:

Case 11. Mrs. G., age 35. Patient has been under treatment for a fairly long period of time, for what was diagnosed by her physician as gall-stone attacks. She was suddenly taken, one evening, with sharp pain in the abdomen, pain radiating to back, fever, leucocytosis and signs of peritonitis. Seen in consultation. Diagnosis of perforation agreed upon, but as the peritoneal symptoms were subsiding at this time, medical treatment was instituted. X-rays 10 days later showed a snail-formed lesser curvature with the whole stomach drawn over to the left side. Under Lenhartz treatment patient improved, and except for some colonic symptoms, recovery has been complete. X-ray one year later showed stomach normal in form and position.

RESULTS.

Of the 72 cases which we include in our series, 42 were treated by the medical measures described, with 32 cures; seven have been very much helped; three have been decidedly improved.

Thirty cases have been operated upon. Of these, three, operated upon for recurrent hemorrhages, all relapsed; in two cases where gastro-enterostomy was performed, death occurred from acute dilatation of the stomach; one gastro-enterostomy died of embolism, another of pneumonia. One case operated upon for chronic perforation died of acute sepsis; and another, operated upon for acute perforation, died of shock following operation. One case, where resection was performed, died of shock after operation. Another of our patients, where resection was performed by the Mayos, relapsed after six months.

We have therefore had a total of seven deaths after operation and four relapses. A large number of our operated cases are far from well, as evidenced by complaints of pain, sour stomach or occasional feelings of gastric distress.

SURGERY OF PEPTIC ULCER.*

By L. ELOESSER, M. D., San Francisco.
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What we have learned of the physiology and pathology of digestion in the last ten or fifteen years has overturned most of our old notions without giving us a stable foundation in their place. The next few years should clarify the subject. Facts and data enough are at hand; it remains to sift and study them.

In the first place we have learned to diagnose ulcer better; it is especially the Röntgen ray that has helped us here. We have learned to distinguish between the different kinds of ulcer, especially as to anatomical location, and we have learned that different kinds of ulcer and differently located ones demand different treatment. Our views, however, as to what kind of treatment is best adapted to each particular form are anything but settled. On the whole I think that our diagnostic insight has outstripped our therapeutic ability.

As to the various kinds of ulcer: The acute ones, the so-called toxic ulcers, if uncomplicated, are not subjects for surgical intervention. They seem to do well enough under medical care, rest and diet. Of course the treatment is lengthy, but it is a mistake to think that surgery can shorten it. The condition predisposing to ulcer remains the same after operation as before—to perform a gastro-enterostomy and to dismiss the patient from medical care after his wound is healed, to say to him, "Go home, you're cured," is to invite almost certain distress and recurrence.

Surgical intervention does not shorten the time of treatment in these cases at all, it only does so when the conditions underlying the process of ulceration have already been overcome,—when we

are dealing not so much with ulceration as with its effects,—then, in the case of a stricture or a scar, we *may* relieve the patient by an operation so that he is dismissed cured as soon as his wound is healed. In acute or toxic ulcer, indeed in the great majority of all cases of ulcer, he needs as careful and as continuous supervision after his operation as before.

Simple acute ulcer should be left to the medical man to treat, with one exception *perhaps*,—and that is duodenal ulcer. Duodenal ulcer presents surgical problems different to those of stomach ulcer mainly because of the anatomical difference in the two organs. The stomach hangs free and carries a peritoneal investiture on both sides; the duodenum lies taut against the posterior belly wall. If a gastric ulcer, particularly a superficial one, heals and contracts down to a scar, it often leaves enough material in the circumference of the stomach unaffected to make up for this contraction. The duodenum is much less elastic, its walls are unyielding and its fastening to the belly wall such that when an ulcer heals and contracts it is prone to drag the adjacent tissues with it and make a stricture. It is this constricting after-effect of duodenal ulcer that might justify intervention even in acute cases.

Certain complications of acute ulcer, whether gastric or duodenal, justify, or make operation imperative. First, perforation into the free peritoneum. It is particularly the acute ulcers that are liable to this complication. The chronic ones if they perforate are more likely to be walled off and to make a localized abscess.

A very fat woman was operated at the City and County Hospital for an umbilical hernia containing large amounts of lipomatous omentum. Much of this was tied off and resected. Two weeks after operation she was suddenly seized with excruciating pain in the upper belly, collapse and vomiting. A probable acute pancreatitis was diagnosed. She died in 12 hours. Autopsy showed a perforated acute ulcer the size of a dime in the stomach wall, possibly from a retrograde thrombosis or embolism of the ligated omental vessels.

The first thing to do in a perforation is to seal the hole by means of a deep infolding suture; it is wise to reinforce this if possible by tacking a flap or a free graft of omentum or peritoneal fat over the suture line. Whether or not to add a gastro-enterostomy depends on the state of the patient and the site of the ulcer. Gastro-enterostomy is particularly indicated in perforating pyloric ulcer if the state of the patient will at all permit,—both to relieve the pressure of stomach contents driven by peristalsis against the suture-line at this point, and to forestall the future pyloric stricture which an infolding here has the tendency to produce.

Continued and copious hemorrhage is another complication demanding operation. It is often hard to know what to do in these cases. We are not to wait until the patient is exsanguine before resorting to operation. On the other hand,

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hemorrhage from an acute ulcer, where the arteries are not sclerotic often stops spontaneously;—especially in gastric ulcer. Copious hemorrhage with melena from a duodenal ulcer usually means erosion of the duodeno-pancreatic artery and will not stop unless arrested surgically.

We should be sure of the ulcer before we operate. You will allow me to insist on this matter of diagnosis. It is remarkable how often the symptom of hematemesis means anything but ulcer of the stomach. An old classical sign degraded from its pre-eminence! It is remarkable how little it is to be depended upon as a sign of ulcer and what various things it may mean—cirrhosis of the liver, uremia, appendicitis, not to speak of confusion with hemoptysis in pulmonary tuberculosis,—even in tabic crises I have seen an abundant vomiting of blood. Only a previous knowledge of the man's tabes saved me from error in this case, I am sure.

A man at the City and County Hospital suddenly began to vomit great quantities of blood. He had a history of previous attacks of dyspepsia. He was collapsed, very pale, almost exsanguine. A transfusion of blood was done and subsequent laparotomy proposed. After the transfusion the man stopped bleeding, but his pallor did not diminish nor his hemoglobin rise materially. In about three weeks he died without having been operated on. Autopsy showed shrunken kidneys, and multiple uremic petechiae of the stomach and bowels,—not a trace of an ulcer. He had shown no other signs of uremia; his urine contained a little albumen and a few casts, nothing noteworthy for a man of his age and habits.

A similar case occurred shortly after in a girl with nephritis after bichloride poisoning.

Another man, an alcoholic, had a copious vomiting of blood. His liver was somewhat enlarged. The interne diagnosed a cirrhotic hematemesis, but his symptoms and history were so characteristic of ulcer that I opened the abdomen. He had no ulcer, so I did nothing. Fortunately, he recovered. He had an alcoholic gastritis and a cirrhosis.

A man in the University of California service at the same hospital vomited large amounts of blood; a gastric ulcer was diagnosed. Gastro-enterostomy was performed. The pylorus was thickened and was thought to be the seat of ulceration. After operation the man vomited more blood than ever; the abdomen was again opened and the pylorus resected. Examination of the resected specimen showed no trace either of a fresh ulcer or of an ulcer scar. The diagnosis in this case was never made clear; the man recovered.

I might multiply cases; but this is not the surgery of peptic ulcer, and again, unfortunately, it is, too often. These things make one hesitate when brought to face a patient who is vomiting blood. Hemorrhage from the stomach is rarely so severe as to make immediate laparotomy imperative. A little time spent on diagnosis before opening the belly is rarely to the patient's disadvantage. On the whole I should say, "Don't hurry. Be sure of your diagnosis first. Then if the hemorrhage

does not cease, operate—if possible, before the patient is exsanguinate or collapsed."

A preliminary transfusion of blood will do no harm, whatever the cause of the gastric hemorrhage may be; it will give time to study the case diagnostically, and if the hemorrhage is from some other cause than an eroded artery may cause it to cease permanently.

After the abdomen is open it is often a matter of much difficulty to determine the source of bleeding. Direct inspection through an incision into the stomach is sometimes of use, more often little help. The gastric mucosa lies in folds and ridges which hide a bleeding point effectively. One can usually feel as much from the outside of the stomach as one can see through an incision. If an ulcer is found it should be occluded with a deep Draper-Mayo suture, then infolded if possible. If the ulcer is too large or too indurated this may not be feasible and we may have to excise or resect in order to stop the bleeding. This, however, is not often the case in acute ulcer, which we are considering here.

Further indication to operate may be given by intractability to medical measures, but in this case, where proper medical treatment has been tried for a proper length of time, the ulcer is no longer acute, it has become chronic.

This brings us to the actual field of the surgeon—chronic indurated ulcer. I think we are all agreed that little can be done for large chronic callous ulcers by medical means; what can be done for them surgically? That depends mainly on the location of the ulcer, and its complications. Mayo's and Moynihan's statistics are the largest. They have both followed their cases over a considerable period of years.

MAYO (GRAHAM) PEPTIC ULCER.

	Number...	Cured.....	Much Improved...	Fair.....	Cured and Improved...	Benefited...
Total duodenal	436	70%	18%	10%	88%	98%
Duodenal (obstruction)...	163	71%	23%	3%	94%	97%
Duodenal (no obstruction)...	275	68%	17%	12%	85%	97%
Total gastric.....	162	58%	22%	13%	80%	93%
Gastr. (obstruction).....	52	67%	25%	6%	92%	98%
Gastr (no obstruction)...	110	51%	23%	14%	74%	88%

MOYNIHAN.

Duodenal Ulcer—Total cases..	302.	
Operative deaths	5—1.65%	
Died later of other causes.....	6—2%	
Cured	250—82.8%	
Improved	21—7%	
Doubtful improvement	1—0.32%	
No better	3—1%	
Not traced	16—5.3%	

These operations were all done by the same man or the same group of men. The statistics of some foreign clinics may be of interest as more closely approximating current conditions. The operations were done by operators of varying ability, chiefs and assistants, which makes these statistics more generally applicable than those of Mayo and Moynihan, who are better surgeons and operators than the most of us. Petré, for instance, cites 328 cases from 14 different Swedish hospitals. He gives for 164 cases of gastro-enterostomy performed from 1904-8, a mortality of 5.5%; for re-

section and excision, 14%. Payr gives 465 cases of resection carried out by 31 different surgeons with 10% mortality. In general, I think that we may ascribe to resection carried out by the surgeon of good average ability a mortality of about 10%, and to gastro-enterostomy a mortality of not over 5%—of late years considerably less.

Late results of operation are as follows: Petró gives 243 cases, 2/3 of them followed for over 3 years, 52% were cured, 73% cured or much improved, 27% still having more or less severe symptoms. Most statistics of surgeons of good average ability give about the same results for the operative treatment of peptic ulcer, about 3/4 of the patients are cured or much benefited, the remaining 1/4 still has more or less trouble.

Now we must confess that all surgical procedures for peptic ulcer are only symptomatically therapeutic. We may, by resection or excision, remove the ulcer, by gastro-enterostomy or infolding hasten its cure, but none of these measures attack its cause, whatever that may be; the real causal therapy, the after-treatment, often lies largely in the hands of the medical man who attends the patient after the surgeon dismisses him.

It is only of late that increasing experience has caused men like Mayo and Moynihan to insist more and more on a thorough exploration of the abdomen in cases of peptic ulcer. It is in extra-gastric conditions that we must seek a surgical therapy that may prove really causal. The frequency of intra-abdominal infections, of cholecystitis and chronic appendicitis, of past typhoid (Mayo found 17% of typhoid history in his series of peptic ulcer), has struck all observers.

What have these processes to do with ulcer? Are they the source of minute infectious thromboses and emboli in the portal system, which cause the primary necrosis and secondary peptic ulceration of the gastric and duodenal mucosa? It was hard to believe this in the face of all the unsuccessful attempts at the experimental production of peptic ulcer by direct infection of the stomach. Rosenow's experiments, however, where peptic ulcer followed experimental streptococcal sepsis with great regularity and where the organisms were demonstrated in the ulcer wall, have made this infective cause of ulceration seem very plausible.

Or are these infections and spasms of the appendix, the gall-bladder, the pylorus merely an expression of a general spasmophilic tendency (whatever that may mean), of a vagus reflex, as v. Bergmann, Rössle and others would have us believe?

Or is the appendicitis, colitis, cholecystitis the primary process in another reflex sense? A number of men, among them Dr. Alvarez here, have shown us that the peristalsis of the whole digestive tube is a most delicate and sensitive mechanism; that any irritation of the lower bowel may delay peristalsis of the upper; that an irritation at the ileocecal valve may cause a closure and contraction at the outlet of the stomach. Now if we have any irritative process, gastric or extragastric, causing this spasm, it will do two things: in the first

place, it will cause a local ischemia of the contracted segment—that a spasm of the musculature of the stomach causes a blanching, we can see during the course of any laparotomy by squeezing the stomach; in the second place, the spasm causes a retention and a consequent hyperchlorhydria. Now in these two elements, ischemia and hyperchlorhydria, produced by a pure reflex irritation, have we not the necessary factors for the production of peptic ulceration?

The consideration of these three theoretical possibilities in the pathogenesis of many forms of peptic ulcer, viz.: direct infectious thrombosis, spasmophilia, and reflex irritation, has, I hope, not led me too far afield; they have a direct bearing on our surgical maneuvers; they offer possibilities of a surgical therapy truly causal. If an inflamed appendix may be the primal cause of ulceration, remove it; if an infected gall-bladder, drain it; if a colitis, treat it. Then you will have done something that will tend to cure and to prevent recurrence, more than all unilateral pyloric exclusion, gastro-duodenal implantation and other new and rare procedures of whose rationale we know little more than nothing.

It has been said sarcastically that the seat of nine-tenths of gastric ulcers is in the lower right quadrant of the belly. If not the seat of gastric ulcer, perhaps then its cause!

I have left out of consideration the great class of arterio-sclerotic ulcers to which Ophüls has called attention. In those cases where the thickening of the gastric vessels is but a part of a general sclerosis, we can of course do nothing causally. There are, however, others that show a proliferation of the intima of the gastric vessels alone, without systemic arterial disease. It is difficult here to say whether this local arterial thickening is a sequel of the ulceration, a sequel of the causal spasm or infection, or whether it is really the primal factor. Ophüls has already called attention to this point. If it is not causal, if the thickening is but a part of the consequences of the primary irritative or infectious process, then by attacking the process itself we may be able to act causally in this class of locally sclerotic ulcer also.

Now besides these true peptic ulcers with accompanying or rather underlying appendicitis or cholecystitis, we have others; cases of hyperchlorhydria, vomiting, hematemesis, typical X-ray plates and a confident diagnosis, where we open the belly and find little or nothing; nothing but a chronically inflamed appendix perhaps, and even that dubious. We doubtfully remove the appendix in the hope that chance may help the patient to get well—and he does get well! May our diagnosis not have been so far astray here after all? May not the gastric conditions causing these pre-eminent gastric symptoms have been but the precursors of future ulceration, which our appendectomy or cholecystostomy has helped to avoid? The surgeon has errors enough charged to his score; he may now and then blunder into doing some good.

A warning may not be amiss here. To do good, and to judge these cases aright, the surgeon must

enter the field with an open mind. Nothing can stand a man in better stead in this connection than a remark of Moynihan's, who said: "Never assume a peptic ulcer that you cannot demonstrate to the onlookers." The diagnosis of *surgical* peptic ulcer is not doubtful. If an ulcer is worthy of surgical measures, it can be seen and felt and demonstrated. All "peritoneal congestions" and "adhesions" and "mucous erosions" are but subterfuges and placebos for the inward doubts of an operator who, afraid to acknowledge his mistaken diagnosis, acts on preconceived notions of what he *ought* to find, and cannot. We must approach every ulcer case with an open mind. There are two diagnoses to be made of a peptic ulcer: one before the belly is opened, and the other afterward. And if the second does not demonstrate a *real* ulcer, one that can be seen and felt, then to let the first guide our operative maneuvers is to court disaster. If there is no palpable ulcer, look further; if there is an appendicitis or a cholecystitis or a colitis, treat that, and let the stomach alone. The patient will often get well; surprisingly often. If you find nothing, do not be afraid to do nothing. It is far better to close the abdomen than to do a gastro-enterostomy for a preconceived notion of what ought to be an ulcer, and is not. Of all ulcers those least benefited by gastro-enterostomy or resection, or by any gastric operation, are those that are not there. It is the gastro-enterostomies for "mucous ulcers," "superficial ulcers," for ulcers that are not ulcers, which give trouble, have vicious circle afterwards, have the largest operative mortality and the greatest post-operative distress. I do not deny that there may be ulcers that cannot be detected from the outside of the stomach, neither by touch nor sight; but if there are, they do not warrant surgical interference with the stomach, and should have remained in the medical man's hands in the first place. If the surgeon finds them he should return them to the internist without the additional complication of a gastro-enterostomy or a resected stomach.

Enough. It all leads to this: In operations for peptic ulcer or for conditions showing characteristic signs of peptic ulcer, the belly should be thoroughly reviewed for other irritative or infectious lesions in all cases, and the stomach should not be interfered with unless in the presence of a clearly demonstrable lesion.

There remains to be considered the strictly local therapy of chronic callous ulcer. The question of resection or excision vs. gastro-enterostomy does not yet seem to be definitely settled. The crux of this question is not the difference in the relief of symptoms nor freedom from recurrence afforded by these two respective procedures; for as far as I have been able to gather from statistics, there seems to be very little difference, but the danger of malignancy, present or future. Now, where there is the least doubt of an ulcer being malignant, either in the light of clinical evidence or operative findings, I think that all are agreed that it is far wiser to remove it. The question hinges upon our ability to settle this doubt. We have no clinical tests that allow us to determine accu-

rately whether an ulcer is benign or cancerous. Even with the belly open, there are many cases in which we are unable to decide.

Let me show you this specimen: Here you see two separate processes, one at the lesser curvature, one at the pylorus. A resection was done because the thickened callous mass at the lesser curvature, with almost pathognomonic miliary nodules in the serosa above it, seemed most suspicious of cancer. The sharp, punched-out pyloric ulcer with thickened edges seemed a typical peptic one. The man recovered. A number of sections of the mass at the lesser curvature showed nothing malignant; the peritoneal nodules were little fibromata. Sections of the pyloric ulcer also appeared benign. Diagnosis: Multiple peptic ulcer. The man got fat and went back to hard work. Six months later he came back with vomiting. Röntgen rays showed a closed gastro-enterostomy opening. We made further sections of the specimen, the suspicious ulcer of the lesser curvature still proved benign, but further examination of the apparently innocent pyloric ulcer showed cancer. The abdomen was reopened; it showed a general peritoneal carcinomatosis. An anterior gastro-enterostomy was done. The man died a month later of carcinomatosis. Here we have a typically suspicious ulcer, even with peritoneal nodules; it proves benign; and a typically innocent ulcer, punched-out and round, it proves malignant. We *cannot* tell; it is better to be on the safe side and resect in these cases.

I think, however, that it is going too far to urge resection for all cases of ulcer. The ultimate results of resection are very little better than those of gastro-enterostomy. Kocher does a gastro-enterostomy in all unsuspecting cases; he has as good results as any one—78.5% complete cures, 94% satisfactory results. Brenner, with a large material of *extra-pyloric* ulcers, has gone back from resection to gastro-enterostomy; he finds his results after resection no better than after the simpler procedure. The indication, therefore, in primarily unsuspecting ulcers lies in the risk of secondary malignant degeneration. We have heard a great deal on one side of this question—the tracing back of cancer to ulcer; very little on the other—the following of ulcer to cancer. These two aspects do not coincide.

It has been estimated that from 13 to 70% of gastric cancer originates in ulcer. MacCarthy gives 70% for the Mayo material, other surgeons from 13 to 43%, the pathologists 16 to 58%. Of patients treated for ulcer by gastro-enterostomy, however, only 1.8 to 6% develop cancer! How can we make these figures coincide? The reason seems to be that the resected specimens which form the basis for the estimate of the cancerous origin of cancer *were* resected because they *were* suspicious of cancer; and the suspicions frequently proved well founded, as in the case cited above. That would make these figures high. On the other hand, in patients with unsuspecting lesions, a gastro-enterostomy was done and the ulcer not removed. There again the innocence of the lesions was corroborated by the subsequent course. Few of these patients develop cancer. It is all a mat-

ter of diagnosis. If you have the least doubt, either from clinical, laboratory or operative findings, resect if possible; if there is really no doubt, gastro-enterostomy offers as good prospects of cure as a resection.

How does gastro-enterostomy aid towards cure? How does it work? By diverting the food-stream from the pylorus, keeping the stomach empty and setting it at rest. So we were told. But it doesn't! It seems to do none of these things. The Röntgen ray has only just begun to make us realize how little we know about it. In the first place, the gastro-enterostomy does not divert the food-stream from the pylorus, still less does it keep the stomach empty.

Cannon and others working with animals showed that the gastro-enterostomy apparently does not work at all, that all the food goes through the pylorus and none through the gastro-enterostomy. That is true for cats and dogs, but not for man; in most cases food leaves both by the pylorus and by the gastro-enterostomy. It does not *drain* through the gastro-enterostomy. Even when we make it large and at the "deepest point," as we were told, the food does not run out of the stomach as out of a hole in the bottom of a bucket; it passes out rhythmically and peristaltically. The gastro-enterostomy does not keep the stomach empty. Radiographs show the emptying to be somewhat accelerated in most cases, from one-half to two to four hours; the stomach, however, is not kept empty by any means, nor is it kept at rest. Emptying through the gastro-enterostomy usually takes place with a distinct peristaltic movement.

Now if the gastro-enterostomy does none of the things it is supposed to do, what does it do? In the first place, it *does* divert the food-stream at times, viz.: when the pylorus is closed, where there is a pylorospasm, when there is an active process keeping up the pylorospasm, and just then when this diversion of the food-stream is most needed. Secondly, it does keep the stomach partly empty, keep it from being over-dilated by retained secretion and food in the presence of pylorospasm, a retention otherwise only relieved by vomiting. And thirdly, it provides a reflux of bile and of alkaline duodenal juice into the stomach. The importance of this reflux, which seems to occur in the majority of cases, I do not know. It seems to play a preponderant part in the reduction of acidity usually found after gastro-enterostomy, and this reduction again seems to be more marked in those cases examined soon after operation than in those examined later. Stomachs examined early after gastro-enterostomy contained more bile than those examined later, whose ulcers had healed. Kocher goes so far as to find a compensatory and regulatory mechanism in this reflux, the quantity of regurgitated bile being proportional to the acidity and not the reverse, as one might suppose.

We have it in our power to make a gastro-enterostomy divert the food-stream from the pylorus, should this really prove requisite to a cure. We can close the pylorus; to keep it closed, however, is not easy. The usual methods of infolding

and puckering, of longitudinal pyloroplasty, etc., have been shown by the X-ray to be ineffectual. The method of Bogoljuboff-Wilms, who occlude the pylorus with a fascial graft, and that of Lambotte, who ties it off with twine, are better, although even they are not secure. The one way to keep the pylorus shut is to cut it through and sew it up, the unilateral occlusion of v. Eiselsberg. This operation carries with it a definite risk of some per cent. Whether the results of pyloric occlusion in peptic ulcer are better than those of simple gastro-enterostomy without occlusion, is hard to say. Statistics seem to show that they are, a little; and that some simple method of exclusion, ligature with twine or fascia or infolding, should be practised in addition to gastro-enterostomy for duodenal ulcer. Moynihan's results have improved from 79 to 88% of cures since infolding these ulcers. We cannot say, however, that this improvement is due to actual pyloric closure. The infolding or puckering of the ulcer itself is probably the more important part of the procedure, whose effect on the pylorus is more imaginary than real.

There remains to discuss the value of the various operative procedures for differently situated ulcers. Those of the antrum, pylorus and adjacent duodenum may be considered together. It is these which are most benefited by gastro-enterostomy, with or without pyloric closure. Especially the stricturating ulcer scars; they give the conditions where relief after gastro-enterostomy is almost certain.

Ulcers of the body of the stomach and of the lesser curvature without obstruction are notoriously less amenable to treatment, whether surgical or medical. Of these not more than 50 to 60% are cured by surgical treatment, and not more than 70 to 80% much improved. Of course this is something. Internal medication is not very effective as regards permanency of cure in these ulcers either. I think you will even concede that it cannot permanently improve some 70 to 80% of these patients. As long as we thought that the efficiency of gastro-enterostomy depended solely on drainage of the stomach and that food passes through the gastro-enterostomy solely in the presence of pyloric obstruction, it was difficult to see the indication for gastro-enterostomy in non-obstructing ulcers of this class. Still gastro-enterostomy was done and a number of these ulcers were permanently cured or benefited. The newer studies of gastro-enterostomy have not served to shed much light on this question, but they have served to make us less positive about our indications. The results of resection seem to be little if any better than those of gastro-enterostomy. It is certain that neither resection nor excision offer security from recurrence. Brenner, mentioned above, returned to gastro-enterostomy after trying resection in a series of 67 cases of extra-pyloric ulcer. Kocher does a simple gastro-enterostomy and speaks of satisfactory results. Körte the same. However, Mayo, Moynihan and others advise resection for this class of ulcer. One fact seems established: that the results of resection or ex-

cision alone, without gastro-enterostomy, are considerably inferior to those of either the combined gastro-enterostomy and resection, or the gastro-enterostomy alone. This would make one inclined to see in the gastro-enterostomy the more important component of the operation, and to see in the resection an added risk without adequate promise of cure. Excision should certainly be combined with gastro-enterostomy. Excision alone carries with it a real danger of subsequent hour-glass contraction; the defect in the stomach always appears surprisingly large, and even when sewn up transversely is prone to contract. So in a case of Dr. H. P. Hill's. A woman had an ulcer excised. A year afterwards she began vomiting again. Re-operation showed an hour-glass stomach. Gastro-enterostomy and a gastro-gastrostomy were done. The woman has remained well since, a period of over four years.

I do not think that variation of our present gastric operative procedure has much to offer towards bettering our results in ulcer of the body of the stomach. It is to a more careful abdominal exploration that we should look, more attention to extragastric processes, and above all, to more solicitous post-operative care. It is just in these cases, where our results are sorry enough, that we must look to the medical man for aid; the operation may help towards a cure, it certainly does not accomplish it. We know that these cases are likely to recur; how can we expect permanent benefit if we discharge these patients as cured directly they leave the hospital, let them go home free of all dietary restriction and medical attention, turn them out to diets of pork and beans and enchiladas! If we will take enough interest in them to watch them, to send them back to their medical advisers, and to instil into their minds the necessity of at least six months' cautious living—if we will speak to them of these things *before* operating on them, and not undertake operation unless they are willing to comply, I have hopes that our surgery may prove less futile.

To conclude:

1. Acute ulcer is not to be treated surgically unless: (a) perforated; (b) bleeding obstinately, or (c) intractable by medical means.
2. Hematemesis should not be made an indication for operation unless the presence of a bleeding *ulcer* can be made reasonably sure. A preliminary transfusion of blood will often give time for diagnostic examination and benefit the patient meanwhile.
3. Chronic callous ulcers suspicious of malignancy should be treated by resection and gastro-enterostomy.
4. Chronic ulcers of evident innocence should be treated by gastro-enterostomy with or without pyloric closure. The results of resection are not sufficiently better than those of gastro-enterostomy to compensate for the added risk.
5. Gastric procedures should not be carried out unless indicated by clearly demonstrable gastric lesions.
6. At all operations for peptic ulcer, the ab-

domen should be carefully examined for extragastric irritative or infectious processes. The treatment of these may be more important causally than the treatment of the ulcer itself.

7. Our gastric operations are not causally but symptomatically therapeutic. Prolonged post-operative medical care is imperative.

In preparing this paper I have put others to a great deal of trouble in the endeavor to gather statistics that might be of local interest. I am sorry to say that the trouble was in vain. I could not gather records sufficiently explicit to make their tabulation profitable. I have to thank Drs. Stillman, Rixford, Cheney, Hill, Cooper, Schmoll, Barbat, Boardman and others for their kind help.

Discussion.

Dr. W. F. Cheney: I have nothing to add to what has been said to-night, but some of the points I would like to emphasize. First, it seems to me, and I think it has been brought out here to-night, that we have absolutely no method of certain diagnosis of either gastric or duodenal ulcer. Our methods are what we call inferential. With regard to a history of hyperchlorhydria, evidences of pyloric obstruction, blood in the feces, and the X-ray findings showing six-hour stasis, none of these makes us certain that ulcer exists. We obtain, by each one of these methods, facts that lead us to infer that an ulcer exists, and the more of these facts we get together, the more certain our inference becomes; but all of you must certainly have had the experience of being proven wrong at the operating table, even when inference seemed most secure.

As regards treatment, the choice between medical and surgical treatment must depend upon chronicity. All are able to cure, apparently, the acute ulcers, but the longer a man practices—the more years of experience he has—the more skeptical he becomes about medical cure of chronic gastric ulcer. He can treat the patient and relieve him for a time. But the cases I cured five or seven years ago have since been coming back with symptoms; and that is not a cure. I think the only honest position to take is to say to the patient: "I can relieve you of your symptoms, can promise you an interval of anywhere from one to five years' relief, but cannot promise you a cure."

After what we have seen at the operating table, it is unreasonable to suppose that we can, by medical means, cure chronic gastric ulcer. Contrary to what has been said by Dr. Bine, my own experience with surgical treatment has been very satisfactory, and I never hesitate to advise a gastro-enterostomy or an excision of the ulcer, when indicated. The results certainly have been more permanent than they have by any method of medical treatment, and the immediate results are likewise good. I have, fortunately, not seen any patient die from the operation, though statistics show that in a hundred cases, two or three are going to die. I think, again, that good or bad results from the operative cases depend very largely upon the surgeon who is selected to perform the operation, and I may say this because, not doing any operations, I am exempt from suspicion as to my motive. The one who is selected to do the work is the one who usually decides whether the result is going to be good or bad. A correct diagnosis and a skillful surgeon thus become the two elements in the cure of chronic gastric ulcer.

P. K. Brown: Dr. Eloesser called attention to one thing, and Dr. Schmoll and Dr. Bine to another that I want to speak about. First, the statement that after any operative procedure the patient wants to be advised that he has six months

ahead of him during which he must treat his stomach with particular care. He has got to know that he has a new mechanical problem and must constantly help it out. We try to teach such operated cases in the Southern Pacific Hospital that, unless they are prepared to do with their mouths the work that they ordinarily leave for their stomachs, they cannot expect much relief. You all know that among railroad employees hasty eating leads to all sorts of gastric disorders, and among brakemen, conductors, etc., gastric and duodenal ulcer are common. They are all put on the Lenhartz diet and advised of the danger of relapse unless they learn to eat slowly, masticating thoroughly. Operation is advised at once in event of relapse. I have seen as many as three operations done in one day for this condition, the total number including a good many pylorotomies, and in all my eight years in that hospital I have never known of but one death.

The second point is the reference to the Lenhartz diet. Our experience teaches us that this treatment has been the largest contribution to the medical care of ulcer that has been made thus far. We have practically no trouble in relieving all symptoms, modifying it slightly to suit each case. We depart from Lenhartz's plan of feeding meat on the fourth or fifth day and do not give it until daily examination of the stools shows that the bleeding has ceased. We have seen no reason, on account of the increased acidity, to stop the meat as suggested by Dr. Schmoll.

I could add a good many personal experiences of interest. One of them concerns lavage for hemorrhage. I recall one instance where as much as one quart of decomposed blood was washed out of the stomach of a patient who was slowly dying of hemorrhage. It was quite evident after having emptied the stomach of these clots, the bleeding was still going on. We put in 8 ounces of adrenalin solution, 2 ounces of 1:1000 and 6 ounces of water, having failed to stop his hemorrhage with ice water. There was some absorption, but the solution was washed out in a few minutes, and the hemorrhage had ceased, and the patient got well. It was a desperate measure, but it seemed justified.

The use of orthoform to distinguish between pains of ulcer and other suggestive pains in that location is interesting. We have tried it and are satisfied that orthoform, given shortly after a small amount of some fluid—preferably orange juice, which is very apt to cause pain—will generally relieve the pain immediately. Twenty grains is the amount usually given, the test being made on an empty stomach in the morning.

We have had operations done on cases of chronic appendicitis, having diagnosed ulcer a number of times, only to close the abdominal wound, not feeling that we ought to do a gastro-enterostomy, and proceeding to remove the appendix.

One typical case of appendix disease simulating ulcer, Dr. Levison reported at one of these meetings. It was a German girl who had been under the care of both Boas and Ewald. Each made the diagnosis of gastric ulcer in which we concurred. While on the Lenhartz diet for ulcer, she had a typical attack of appendicitis. When she was opened and the appendix removed, the presence of old adhesions indicated she had had appendicitis before, and doubtless all her symptoms, constant bloody vomiting and pain immediately after eating, were due entirely to the appendix trouble.

I don't think anyone has heard these papers without appreciating that they represent a tremendous amount of accumulated truth and the value of personal experience. Dr. Eloesser's paper especially was certainly a classic, and I shall have occasion to refer to it a good many times.

Dr. Alfred Newman: Apropos of the treatment of hemorrhage, I can mention a case I treated which may be of some interest. Twenty-four

hours after a gastro-enterostomy for an ulcer of the lesser curvature, the patient began to vomit blood. It seemed as though he had vomited a bucket of blood by the time I got there, and he was in extremis. It was a question of doing something and doing it quickly. My old standby has always been Monsel's solution. I washed out his stomach with ice water and Monsel's solution. I used two ounces in 500 cc.—two ounces in a pint. It stopped his bleeding. After I got the blood out of his stomach, I put two ounces of 50 per cent. solution into the stomach, and in order to give the heart something to go on, I gave him a liter of Dr. Hogan's gelatin solution intravenously. The patient got over his hemorrhage.

Dr. W. C. Alvarez: We must always keep in mind that the X-ray examination seldom gives us more than a functional diagnosis. Except in the few cases where we get a "Füllungsdefekt," or a perforating ulcer with bismuth outside the stomach, we do not see the lesion—we see disturbances of function from which we surmise the presence and character of the lesion.

The main question we must ask ourselves about a stomach case is, can he be treated medically with any prospect of success, or is there an organic lesion present which must sooner or later be operated upon? When we are in doubt, to which side should we lean? As Dr. Bine and Dr. Schmoll say, finances enter the problem very largely. If a man who barely exists on a small salary, be put to bed for two or three weeks—and any ulcer cure without rest in bed is a half-hearted procedure—and if at the end of that time he is no better, or if the ulcer is to break out again in a few months, you have injured him—he has wasted time and money that might have been spent on the operation.

A great deal depends on the age not only of the patient but of the illness. If a man with duodenal ulcer has had attack after attack for many years, the chances are that he has so many adhesions to gall-bladder and colon that the healing of the ulcer alone will not give sufficient relief. To be sure, surgery also must often fail to give perfect comfort afterwards. The patient cannot expect that, but he does want life to be worth living and he wants to be able to keep at work. In one of my cases recently, the surgeon found a duodenal ulcer which had become adherent to the gall-bladder, while the omentum was attached to operative scars on the pelvic organs. This condition explained the pain which she had suffered on standing, for then everything hung from the under surface of her liver. The history had been largely that of gall-stones. She is grateful for the great change in her health, although with an abnormal opening out of her stomach and some remaining adhesions she cannot hope to have the abdomen she had before.

Jordan has called attention to the fact that the usual spasmodic, hour-glass contraction relaxes and disappears at operation because of the anesthetic. In several such cases, a gastro-enterostomy opening has been placed within the zone of contraction, and the patient has died afterwards with the so-called "Duodenal death." This was due probably to the obstruction of the stoma and of the lumen of the jejunum when the spasm returned.

A good history is essential in stomach work, but unfortunately we often cannot obtain it until after operation. Before operation the patient is on his guard; he will not tell you anything which will prejudice you in favor of the knife. If you want to get a good history, take it again when he is convalescing. With great difficulty recently did I make a man admit that he had had stomach trouble at the age of twenty-two, but even this clinched my diagnosis of duodenal ulcer at forty-five. After operation he admitted that he had been close to death with appendicitis several times.

With all modern methods I defy anyone to

make a diagnosis at times between ulcer and cholecystitis. I believe that in these cases we should say as do the Mayos very frequently: "You have a surgical condition in the upper right quadrant of your abdomen, and you will have to be satisfied with that diagnosis." I have seen recently four cases, one right after the other, in which adhesions were found between duodenum and colon or duodenum and gall-bladder without any signs of previous ulceration.

Dr. G. E. Ebricht: I shall confine myself to one point: the treatment of hemorrhage. In cases of hemorrhage the mortality in cases left alone is in the neighborhood of two per cent. It requires rare judgment and rare courage, in considering a patient who has severe bleeding from stomach ulcer, to realize that if let alone his chances are better than when interference takes place. As the blood is lost, the blood pressure is lowered to such a point that clotting may take place, and the bleeding gradually stops. For that reason we avoid using cardiac stimulants in shock just as much as possible. The use of adrenalin and drugs of that nature is much best left alone if possible. If styptics can be applied locally to the bleeding point, it is a different thing, but agencies to raise the blood pressure and stimulate the patient out of shock, should be used with extreme caution.

Dr. L. Eloesser, closing discussion: We have been fortunate with our results at the City and County Hospital, more fortunate than Dr. Schmoll would indicate. We have had about a dozen cases, treated by gastro-enterostomy, resection and excision, and have been lucky enough to have had them all recover. I think it has been due in great measure to Dr. Hill's help. We have tried to work with the physician, rather than against him, and have consulted and respected his opinion as to indications for operation.

If we cannot cure causes of ulceration, medical men cannot cure them either. Perhaps we can, however, do more to cure the causes of ulceration than medical men by treating, when we open the belly, concomitant conditions, by removing the appendix or the gall-bladder.

I must strongly protest against Dr. Bine's dictum that the hour-glass stomach is not a subject for surgical intervention. I should like to ask what he means by an hour-glass stomach. Dr. Alvarez says that the hour-glass stomach disappears at operation—that it disappears under an anesthetic. Now, a true hour-glass stomach does not disappear under the anesthetic at all. Those cases that disappear are not hour-glass stomachs; they are spastic stomachs, X-ray stomachs, if you like. You can diagnose them. If the X-ray shows an apparent hour-glass, give the man a physiological dose of atropin and X-ray him again. If the spasm is gone, he has no hour-glass stomach. If you operate for hour-glass stomach and he really has one, it will not disappear under ether. You will see a scar and a constriction so firm, inelastic and tight at times that you cannot get a finger into the opening.

As to bleeding, I think, too, that bleeding in acute ulcer is not a case for surgical intervention. In aged individuals, however, when the arteries are hardened, it does not stop unless you close the vessel surgically. In acute ulcers, bleeding stops because the vessel is not sclerotic and can close by itself. These cases are for medical treatment.

I have not gone into the various surgical procedures, because I thought that their discussion was more for a surgical than a medical meeting. I think the Finney operation is valuable in many cases of pylorospasm; it does away with the dangers of vicious circle. The use of the Finney in duodenal ulcer, I think is not as good as gastro-enterostomy—we get too close to the ulcer itself, for one thing, and we do not get the reflux of alkaline intestinal contents into the stomach for another.

THE DOSE OF SALVARSAN.

By DOUGLASS W. MONTGOMERY, M. D., San Francisco.

Because of the occasional occurrence of encephalitis hemorrhagica and other accidents, the dose of salvarsan is undergoing decided modifications. The dose recommended for general use when the drug was first introduced was 0.60 gm. for males and 0.40 gm. for females, equivalent in neosalvarsan to 0.90 gm. for males and 0.60 gm. for females. When these doses are carefully given, in almost every instance they are borne without any disagreeable symptoms whatever. There may be some vomiting, there may be some diarrhea, there may be some diuresis, but the patients usually arise from the couch, on which they have received their infusion, and experience no ill effects. Deaths do, however, result from the administration of salvarsan, and they are particularly distressful. When such an accident occurs quickly following the infusion of a drug into the blood, the physician cannot escape the feeling of responsibility, nor can he elude the censure of those that surround him. Both remorse and blame are especially sharp in those instances in which the medical man has strongly urged the acceptance of the treatment. As the whole dose is administered intravenously and at one time, it is therefore irretrievable, and when once given it goes on its way for good or for evil without any essential modification of its action being possible.

Barring accidents from faulty technique or from disability on the part of the patient, such as a persistent status thymo-lymphaticus, advanced disease of the liver or the kidneys or illy compensated valvular disease with cardiac myodegeneration, the accidents from salvarsan are very few indeed. Deaths, however, have occurred when the dose was moderate, when there was every reason to suppose the drug was unchanged, and when the technique was faultless, and when the patient seemed in every respect suited to receive the treatment. It would seem that in these rare cases the patients are abnormally susceptible to the drug. This hypersensitiveness to salvarsan may involve the skin, the gastro-intestinal tract, the kidneys, the liver or the brain and its meninges. This last class of cases in which the brain and its meninges are hypersensitive to salvarsan, constitutes by far the most interesting group.

Meirowsky and Kretzmer have tabulated the deaths from salvarsan, and these tabulations are most impressive in their bearing on the dosage, and on the question of encephalitis hemorrhagica.¹ In all there are only one hundred and nine deaths. As far over a million doses had been given when these tabulations were made, and as a multitude of causes, besides the nature of the drug itself, entered into the result, the small number of fatalities is remarkable. And this small number cannot be ascribed to inadvertence in reporting cases, as no drug has been watched half so jealously as salvarsan.

In eighty-five cases the stage of syphilis at which the death occurred is noted. It appears that in twelve of them the dose was given and the death

occurred when the patients were in the primary stage of syphilis; in thirty-five when they were in the secondary stage, and in seven when they were in the tertiary stage. In eight of these fatalities the patients had latent syphilis, and in twenty-three, the patients had syphilis of the central nervous system, such as tabes, paralysis or cerebral lues.

These figures are surprising indeed as they show such a large percentage of the deaths, thirty-five out of eighty-five cases, or 41.2%, in secondary syphilis. This heavy death rate in secondary syphilis is brought out still more saliently if only the cases of encephalitis hemorrhagica are considered.

CASES OF ENCEPHALITIS HEMORRHAGICA CLASSIFIED ACCORDING TO THE STAGE OF THE DISEASE IN WHICH THE ACCIDENT OCCURRED.

Meirowsky and Kretzmer have collected thirty-four of these cases. In six of them death occurred in the primary stage of syphilis, seventeen in the secondary stage, and two in the tertiary stage. In five of the cases the patients had latent syphilis, and in four the patients were suffering from some form of syphilis of the central nervous system, such as tabes, paralysis or cerebral lues.

In this last enumeration, seventeen, constituting 50 per cent. of the deaths occurred in patients suffering from secondary syphilis. Clearly those in the secondary stage of syphilis show a greater susceptibility to a disastrous result, and to a disastrous result involving the cerebrum, than those in any other stage of syphilis.

The susceptibility of those in the secondary stage of syphilis to this particular kind of accident stands out still more prominently when one reflects that the acquisition of syphilis is most frequent at the height of sexual development and therefore in individuals in the prime of life and health, and that the secondary period follows close on the primary stage, or stage of acquisition, and therefore with individuals equally robust. The accident, therefore, is not due to constitutional weakness in the individual, as those, for instance, suffering from syphilis of the central nervous system must be constitutionally much weaker. Nor is it true that the total number of treatments during the secondary stage equals or exceeds the treatments in all the other stages combined; on the contrary the treatments during the other stages must by far exceed those in the secondary stage.

Tomasczewski believes that the accidents attributable exclusively to salvarsan are due to ideosensitiveness; in one case affecting the skin and giving rise to a Herxheimer reaction, in another affecting the kidneys, in another reacting on the gastro-intestinal tract, in another affecting the liver and in still others producing a meningeal and cerebral symptom-complex. It is thought that the presence of any septicemia, whether spirochetal or other, may peculiarly sensitize the brain and meninges, and so account for the comparatively large number of instances of encephalitis hemorrhagica occurring during the secondary stage of

syphilis, in which a spirochetemia undoubtedly exists.

THE NUMBER OF DOSES AND THEIR SIZE, AND, IF MORE THAN ONE DOSE IS ADMINISTERED, THE PROXIMITY OF THE DOSES, AS CONTRIBUTING TO A FATAL RESULT.

Cases in which death occurred after one dose:

In thirty-six cases there were three fatalities after one dose of 0.30 grm. or less; six fatalities after one dose of 0.31-0.40 grm.; eleven fatalities after one dose of 0.41-0.50 grm. and sixteen fatalities after one dose of 0.51 grm. and over.

Cases in which death occurred after two or more doses of salvarsan:

There are forty-five fatalities in this category. Only the size of the last dose is here considered. In the forty-five cases, one death occurred after a final dose of 0.20 grm. There were six fatalities after a final dose of 0.21 to 0.30 grm.; ten fatalities with a dose of 0.31 to 0.40 grm.; ten fatalities with a dose of 0.41-0.50 grm.; and eighteen fatalities with a dose of 0.51 grm. and more.

Another very interesting table takes under consideration the size of the dose and the fatalities from encephalitis hemorrhagica. There are in all forty-one of these cases, and there was one fatality at a dose running from 0.20-0.29 grm.; five fatalities at a dose running from 0.30-0.39 grm.; eight fatalities at a dose running from 0.40-0.49 grm.; and twenty-seven fatalities at a dose of 0.50 grm. and over. It will be seen that the fatalities increased with the dose, and that twenty-seven or 65.8% of them occurred when the dose was 0.50 grm. or more. However, it will also be noted that although the larger the dose the more apt encephalitis hemorrhagica is to occur, yet it may supervene even on the administration of a very moderate dose, 0.30 grm. or less. Furthermore, its supervention cannot be ascribed to any fault in technic or to any change in the drug, but is a poisonous manifestation of salvarsan itself.

RELATIONSHIP OF THE DEATHS TO THE REPETITION OF THE DOSE.

It would appear that when the dose is repeated within a week the danger from salvarsan is much increased. In thirty-six cases when a second dose was given and death followed, twenty, or more than half of them, occurred when the second dose was given within a week from the first, and seven occurred when the dose was repeated within two weeks.

Meirowsky and Kretzmer conclude from all the facts they have been able to gather that the size of the dose and the intervals between doses are the two decisive considerations, and they propose to make it a principle never under any circumstances to give more than from 0.30 grm. to 0.40 grm. of salvarsan to a dose, and never to repeat the dose before the lapse of eight to fourteen days. Taking the number of injections of salvarsan at a million and the number of deaths at a dose of 0.30 grm. of salvarsan at ten this would give a chance of one in one hundred thousand that a death would happen. But in subjecting these ten cases to a

critical analysis they find that a number of the deaths could have been avoided. One of the patients of this group had aortitis luetica with myodegeneratio cordis, and died of pneumonic embolus. Another of the patients had tonsillar swelling, high fever and icterus after a first injection of 0.40 gm., which were direct contraindications against giving the second dose, after which he died. Another of these patients was very fat, and suffered from mitral insufficiency. Coma set in thirty minutes after the injection that ended in death. At the autopsy both cardiac ventricles were markedly dilated, and there was oedema of the brain. Another patient at the time of injection was suffering from severe nephritis, which is an absolute contraindication for this treatment. Another died five weeks after the last injection, and therefore the connection between the death and the administration of the dose was improbable. Another got three doses of 0.30 gm. within thirteen days, and they were, therefore, too quickly repeated. Six out of the ten fatalities were evidently due either to weaknesses inherent in the patient, or to the dose being repeated when a contraindication like icterus was present, or to repeating several doses too quickly. With care, therefore, in employing this dose of 0.30 gm. the deaths might have been reduced to four in a million; a very low death rate indeed.

At a recent meeting of the Berlin Medical Society, E. Lesser stated that a sufficient and requisite course of treatment consists in giving three or four intravenous injections of 0.30 to 0.40 gm. each of salvarsan.² One such injection is given every two or three weeks, and mercury is administered in the intervals. This course would, therefore, take from six to nine weeks for its completion. E. Lesser is a man of the widest experience, and of most excellent judgment, and his recommendations in this matter are to be regarded with the utmost seriousness.

At the same meeting Friedlander advised a dose as low as 0.30 gm., even when the chancre was present. For later symptoms he recommended one dose of 0.30 gm. followed by smaller doses, so that the total amount given in a course of six weeks would be 1.50 gm. Bruns advised frequently repeated small doses, and remarked that of the eighty-seven cases of encephalitis hemorrhagica reported according to Mentberger in literature, fifty-seven had received a dose of over 0.30 gm., which was in his opinion too high. Rosenthal got his best results by employing mercury and two or three intravenous injections of 0.30 to 0.40 gm. of salvarsan each, and Isaac said that when the chancre was present he got constant abortive results by giving three or four doses of 0.30 gm. each.

I personally have been accustomed to give a much larger dose of salvarsan, 0.90 gm. of neosalvarsan, equivalent to 0.60 gm. of salvarsan, but the above statistics and expressions of clinical experience have modified this, because in the vast majority of instances, doses of 0.30 to 0.40 gm., when rightly managed, achieve everything that can

be accomplished by the drug, even to the definite extinction of the disease, and the larger dose can do no more than this, and exposes the patient to a risk that can be decidedly minimized by employing a smaller dose. Even in those cases of persistent Wassermann reaction, without the presence of any other symptom whatever, the best treatment seems to be repeated moderate doses of salvarsan with injections of grey oil intervening.

The above statistics of Meirowsky and Kretzmer must, however, have their most telling effect in our attitude towards patients in the early secondary stage of syphilis when the spirochetemia is at its height. Here either of two courses may be pursued. One small dose may be given to reduce the spirochetemia, followed by ordinary normal doses of 0.30 or 0.40 gm. of salvarsan combined with mercury. Instead of this a few doses of mercury may first be given as advised by E. Lesser. This would also reduce the spirochetemia, and would then permit the administration of ordinary doses of salvarsan.

In this review, for the sake of simplicity, the dosage of salvarsan has been given, and that of neosalvarsan rarely referred to. Neosalvarsan, however, in the relationship as marked on the tubes, is to be regarded as just as effective as salvarsan, is much easier of administration, and not nearly so toxic when by mischance it infiltrates into the tissues.

As regards a lower dose for women than for men, in my own experience I must say that women bear the same dose as men equally well. I think the idea of giving women a smaller dose of this drug rests on the laboratory practice of giving a dose according to the weight of the animal experimented upon. This may be a good rule as between the smaller and larger animals used in laboratories, but in such large beings as man the difference in weight between the male and the female cannot be of such importance. Of 109 cases of death from salvarsan, eighty-six were males and twenty-three were females.³ That is to say the deaths in males were three times greater than in females, but this difference rests probably on the greater number of males who have syphilis and who therefore have received treatment.

Personally, I should be inclined to consider all doses above 0.45 gm. as high and all below 0.25 as low, without, however, presuming to dictate that a higher dose than this shall not be given. The physician must be left free to use his judgment within very wide limits in the individual case. It is, however, required from him that he shall know the drug he is employing and that he shall have a clear idea of the results he wishes to obtain.

(1) Die Salvarsantherapie der Syphilis von Dr. Meirowsky und Dr. Kretzmer. Praktische Ergebnisse auf dem Gebiete der Haut und Geschlechtskrankheiten. Edited by A. Jesionek. Dritte Jahrgang. 1914, S. 441.

(2) Berliner Medizinische Gesellschaft. Sessions of March 4 and 11, 1914. Original report by Drs. Felix Pinkus and O. Sprinz. Dermatologische Wochenschrift, May 9, 1914.

(3) Meirowsky and Kretzmer, loc. cit.

THE EARLY DIAGNOSIS OF CANCER OF THE RECTUM.*

By ALFRED J. ZOBEL, M. D., San Francisco.

Cancer of the rectum is rarely observed in its earliest developmental stage, as during that period it seldom manifests any sign of its presence. But after significant symptoms strongly suggestive of its existence make their appearance it is possible to discover it early through a careful rectal examination. Yet oftentimes the most indicative symptoms, such as supposedly would prompt even a poorly-trained observer to suspect malignancy, are passed over with seemingly careless indifference. As a consequence a neoplasm, which if diagnosed earlier might have been excised, promising prolongation of life and even permanency of cure, becomes an inoperable mass resulting in suffering and early death. Unfortunately too many await for all the classical symptoms of rectal cancer,—pain, hemorrhage, obstipation, and loss of weight,—before they are impelled to make an examination of the terminal portion of the bowel. By that time the golden opportunity for surgical interference has passed.

In no part of the body is a malignant growth more insidious in its approach than in the rectum. Evidence is given of its presence only after a firm hold has been secured on the tissues of its host. For months after commencing to thrive it betrays itself only by such slight signs as seldom urge a patient to consult his physician. But sooner or later some one symptom becomes more aggravated and then relief is sought. It is at this time that there can be no palliation for the offense of not making a thorough rectal examination. Too often is the diarrhea considered the result of some indiscretion in diet and treated accordingly; the pain and bleeding supposed to arise from hemorrhoids, and an ointment or suppository prescribed; the constipation dismissed with a laxative pill. Too often is the rectal examination neglected simply because of a desire to comply gracefully with the wishes of a pseudo-modest patient who perhaps strongly demurs against the procedure; or more likely it is on account of a reluctance on the part of the examiner himself who has an overdeveloped sense of the niceties of things, not to term it more correctly laziness. So, slight, early symptoms grow worse, others supervene, and finally by the time the diagnosis is apparent even to a tyro in medicine the patient is far on the road towards that country from whence no traveler returns.

Mayo struck the keynote truly when he said that it is lack of examination, rather than lack of knowledge, which is responsible for most mistakes in diagnosis.

It should first of all be borne in mind that cancer of the rectum is not necessarily a disease of middle and advanced life. About 10.8 per cent. of Cripp's cases occurred in patients under forty years of age, one being a child of fourteen years. According to Grule it has been observed even in children under ten years of age. An explanation given for this is the frequency with which adenoid

growths occur in children, in whom rectal cancer is generally of the gelatinous type.

Two to three per cent. of all rectal cancers occur during the third decade of life, therefore the suspicion of its presence even in those in the full flush of young man and womanhood must ever be in the mind of the careful, competent, and conscientious diagnostician.

In recent years the percentage of deaths from all cancers has become progressively larger, and cancer of the gastrointestinal tract claims the greater part of the victims. Cancer of the rectum takes a liberal share of these as evidenced from Mayo's statistics of a series of 1,264 cases of cancer of the gastro-intestinal tract which were operated on. Of these 219 were of the large intestine, while 168 were of the rectum, the latter being three-quarters as many as of the colon, and 13 per cent. of all cancers of the digestive tract. Boas states that 16 per cent. of all his cases of cancer of the digestive tract were located in the rectum. Ewald's statistics show that there are nine cases of cancer of the rectum to two in the rest of the colon.

Being mindful of its frequency and its occurrence at any age, the necessity for its exclusion in the making of a diagnosis is apparent.

Rectal pain, tenesmus or bearing down sensations; diarrheal or constipated conditions; blood, mucous or pus in the bowel movements, are symptoms which may have cancer as their source, as well as they may be manifestations of simple benign rectal lesions. It requires a digital and proctoscopic examination to establish a correct diagnosis.

As a rule it may be said that rectal pain is more often caused by a seemingly insignificant lesion, such as a fissure of the anus, or an inflamed hemorrhoid, than by a malignant growth. In the early stages of rectal cancer pain is practically absent. There may be only an indefinite sense of uneasiness which is just enough to make the patient continually cognizant of the possession of that organ; or there may be a marked pruritus and which sends the patient to the doctor for relief. The disease may go on to complete obstruction of the bowel and still cause little or no pain when it is located in the ampulla or in the upper third of the rectum.

The mucous membrane in this situation is far less sensitive than about the anus, so that when a growth arises here, there is little pain until ulceration of its surface occurs and it is rubbed against by passing fecal masses. Even then the pain is not acute but is dull and heavy in character, and is noticed more after exercise and at night. It is only later on when the disease has progressed almost to its limit that the pain becomes more constant and severe. These are the cases which are most likely to reach the surgeon only after the condition is so well developed that it is practically inoperable.

Pain is generally manifested early when the neoplasm involves the anal margin, as this locality is especially well supplied with sensory nerves. The pain is then very acute, and often accompanied by a heavy bearing-down sensation in the rectum.

* Read before the San Francisco County Medical Society, August 11, 1914.

It may precede, accompany, or follow bowel movement, and persists for some time afterwards. Like symptoms occur with anal fissure and ulcerated internal hemorrhoids, and treatment has been instituted for these simple conditions when the graver one has been overlooked.

A continuous, chronic, dull pain in the lumbar or sacral regions, which by the patient and very often his physician is attributed simply to "a lumbago"; a sensation of weight in the perineum after standing or walking; pains, shooting down the legs, especially in the left one, which are often thought to be due to a "sciatic neuritis"; abdominal pain, which in the aged is a common symptom of malignant disease of the rectum; are oftentimes the very first symptoms of rectal cancer which, if properly investigated, should lead to an early diagnosis of the disease.

Hemorrhage is not always a constant feature of malignant rectal growths. In the early stages it comes from the congested mucous membrane overlying the site of the lesion, is small in amount and recurs at intervals. This slight recurring bleeding is what usually urges the patient to seek medical advice, and he generally comes with a self-made diagnosis of "piles" which is often accepted by his physician without further question or examination. Like pain, bleeding occurs earliest when the growth is near the anal orifice. It is seldom very copious. When so, it is more likely to come from co-existent internal hemorrhoids, although after the cancer is far progressed there may be very severe bleeding from erosion of a vessel in the bowel wall. It is more marked in the papilliferous than in the infiltrating type of carcinoma.

Hemorrhage may not occur at all, or only very late, when the growth is high up in the rectum. It becomes mixed with purulent material after the growth is ulcerated and surface disintegration has taken place.

We have observed a constant profuse bleeding from ulcerated internal hemorrhoids which caused a profound anemia somewhat resembling the cachexia of advanced carcinoma, and which from being accompanied by pain and bearing down sensations in the rectum made us very suspicious of malignancy.

The discharge of a slight amount of blood or bloody mucous from the rectum, in the absence of hemorrhoids or other benign rectal lesions, even though unaccompanied by pain or other symptoms, may be the earliest warning signal which is given out by a malignant growth. Even if on low proctoscopic examination bleeding internal hemorrhoids should be discovered, a high procto-sigmoidoscopic examination should not be neglected, for there could be yet a possibility of cancer in the bowel above.

Among those symptoms of incipient carcinoma which should stimulate investigation, but which are disregarded by layman and physician far more than pain and hemorrhage, are two most important ones, diarrhea and constipation.

While pain and hemorrhage, by causing discomfort and alarm are quite apt to compel an individual to seek advice early, diarrhea and con-

stipation, being such familiar symptoms commonly supposed to be due to faulty diet or other causes of a simple nature, rarely are considered of sufficient import to warrant consulting a physician until they become particularly severe. Obviously, by that time the disease is usually far advanced. Careful inquiry into the past history of sufferers from rectal cancer will often elicit the statement that either they have been badly constipated for some time, or that while constipation does not exist at present it did for a period within the past few months. Tuttle found this to be the fact in over 40 per cent. of his cases, and in consequence the question arose in his mind whether the irritation of arrested, hard fecal matter might not be the exciting cause of malignant invasion. Arbuthnot Lane evidently thinks likewise for he asserts that cancer of the lower rectum is the direct consequence of constipation. As the constipation is not associated with abdominal distension it is evidently not caused by mechanical obstruction.

If the growth is in the upper third of the rectum, a location where it generally infiltrates circularly about the bowel, the resulting stenosis very soon leads to an obstructive type of constipation. Relief is usually sought at once, and the surgeon then sees the disease comparatively early. In an adult, increasing constipation or extreme constipation which persists for several days or weeks at a time and which especially does not yield readily to treatment, should arouse strong suspicions of cancer, and always demands a careful recto-sigmoidal examination.

Following closely upon an attack of constipation there often arises a diarrhea which may be slight at first, then more marked later on, but always being most persistent. This unusual frequency of bowel movement may be an early sign of the presence of a growth and generally brings the afflicted one sooner to the attention of the physician than does the opposite condition, because, though the average individual deems himself capable of self-treating constipation, he feels that the treatment of a long-continued diarrhea should be left in more competent hands. It is again regrettable that too often at this favorable opportunity no rectal examination whatever is made, but the trouble is considered to be a purely local one, and treatment which naturally fails to afford relief is instituted. Therapy is depended upon to establish a diagnosis when perhaps only the insertion of an examining finger into the rectum was required to make it certain.

In every instance where there is a sudden onset of mucous colitis, with pain and tenesmus, in an elderly person who previously had normal bowel movements, a thorough digital and proctoscopic examination should be made to find or exclude malignancy. This should be insisted upon also in any person with a slight morning diarrhea associated with mucous passages, and, to be on the safe side, in every case of diarrhea which, notwithstanding intelligent treatment, lasts longer than a week. In illustration of the value of this some fifteen years ago a man, 55 years of age, heavily built and apparently healthy and rugged,

came under my observation. A severe diarrhea which he had for several months was his only complaint and symptom present. Having received no relief from private medical attendants he sought it at the clinic. It needed merely the introduction of the finger into his rectal cavity to establish a diagnosis, a procedure, by the way, which was considered an absurdity by the patient, who ridiculed the idea that a young, recently graduated medico could possibly possess more diagnostic skill than the gray-beards whom he had previously consulted. He stated that it was the first examination he had had during the long course of his illness.

After a growth begins to break down, the diarrheal movements increase in frequency and amount. It is in reality a false diarrhea, the passages being composed mainly of blood and mucous. The latter has a particularly offensive odor. Its appearance in increased quantity in the stools is generally indicative of ulceration of a growth in the ampulla of the rectum. It may be thought to be amebic colitis. Even such a skilled observer as Leonard Rogers reported a case which he suspected clinically to be amebic dysentery, and it was only the failure of treatment by emetin hydrochloride, and the absence of bacilli or amebas in the stools, which suggested a careful examination of the rectum, with a consequent detection of cancer. Several cases of amebic colitis have been seen by the writer where the first suspicion was of cancer, owing to presence of a very suggestive symptom-complex.

When the amebiasis is further complicated by multiple adenomata in the rectum and sigmoid, such as has been reported by J. L. Jelks, of Memphis, Tenn., who has observed as many as eighteen of these growths in one individual, then the condition is especially apt to be suspected at first of being malignant. However, the history, stool and proctoscopic examinations, together with the results of injections of emetine hydrochloride, aid in making a correct differential diagnosis.

The diarrhea is very often accompanied by tenesmus and frequent calls to stool. The latter may be only false impulses for defecation, and the only symptom of a latent growth. Slight tenesmus and a feeling of discomfort sometimes come on early, are due to irritation, and are many times supposed to result from hemorrhoids and treated without further examination.

It is only after the disease has progressed so far that the surface of the growth becomes irritable and cannot tolerate longer the presence of feces that there is any considerable tenesmus. There is then a constant sensation of fullness in the rectum, and a continual feeling that it needs evacuation. The frequent urgent bowel movements may number as many as ten to twenty in the twenty-four hours, and consist for the greater part of only blood-stained purulent discharge.

Loss of weight does not necessarily occur in the early stages of rectal cancer. It becomes a noticeable symptom mainly during the ulcerative period of the disease. A case in illustration was one referred to me recently for a confirmatory diagnosis. The patient was a man of 59 years, apparently in the best of health, weighing normally

200 pounds. He now weighed 190 pounds, but was unaware of any recent loss in weight. Yet, about 6 c. m. above the sphincters he had a fungating, ulcerated, bleeding carcinoma which entirely encircled the bowel. It was the incessant loss of blood which made him seek relief. During the previous year he had consulted several doctors and each one had treated him for "piles" without making any examination. Even though the condition had advanced so far that it was inoperable yet there was not only a comparatively slight loss of weight but also none of the cachexia so pathognomonic of advanced carcinoma. As a general rule it is only when the hemorrhage has been very profuse, and when there is considerable suppuration that there is marked emaciation.

Ribbon-shaped stools are now considered of little import in aiding early diagnosis since we have learned that they are due principally to proctospasm which is more likely to arise from ulcerated internal hemorrhoids or an irritable anal fissure. After the growth has developed for some time the stools become fragmentary, or if cohesive are small in diameter, covered with a milk-colored mucous and perhaps streaked with blood.

When there is a history of urgent calls to stool immediately on arising; of stool irregularity associated with indigestion; or of flatulence and passing of much wind in a previously normal individual, a rectal examination is imperatively demanded. It is only when this shall be done at the time the patient is first seen by his medical attendant that cancer will come to the surgeon early enough for successful life-saving operative procedures.

Through either reflex or mechanical causes vesical irritability may be induced by a neoplasm of the lower bowel. At times anuria resulting from direct compression of the ureters or from reflex action may be a prominent complication. Papin has reported a case in which it was the first sign of any rectal trouble.

Malignant disease in the lower rectum generally develops in connection with hemorrhoids. This is commonly so in elderly people. According to Laurent hemorrhoids may even be the etiological factor of cancer. Therefore, realizing how insidious is the oncoming of this dreaded disease, and how imperceptible is the grafting of malignancy on a benign lesion, we should always be on the alert, especially so when there is a rapid development of internal hemorrhoids in an individual who previously has been free therefrom.

A man of 66 years came into my service at the San Francisco Polyclinic, giving a history of protrusion at the anus, rectal pain, profuse hemorrhages, and frequent diarrheal stools. He was plainly emaciated and cachectic. Yet in the face of all these symptoms had received treatment for "piles" from two outside physicians who had made no attempt to confirm their snapshot diagnosis by a visual or digital examination. Again to quote Mayo, "It is failure to make a diagnosis while the disease is still local, and not any peculiar malignant tendencies in the presence itself, which accounts for the fatal character of cancer in this

region." Fifteen per cent. of the cancers of the rectum seen by the Mayos had been operated on previously for supposed hemorrhoids.

It is not only lack of examination but sometimes failure to do it properly that results in wrong diagnoses, as the following will illustrate: A fine, robust appearing Scot, 34 years of age, was referred to me for an opinion regarding the nature of a tumor found in his rectum. It seems that having had a rectal discharge of blood for some little time he consulted his physician who at the first visit simply prescribed for supposed "piles," but at the next visit as the bleeding still persisted made an instrumental examination. Not seeing anything but considerable bloody purulent material in the rectal cavity he made a diagnosis of a discharging submucous abscess. Treatment being of no avail the patient sought the advice of another physician who discovered the growth.

On digital examination, about 7 c.m. above the anal orifice there could be felt a cauliflower-like growth which encircled the entire gut with the exception of 2 or 3 c.m. of its posterior wall. It permitted the entrance of the finger through its center, but was closely adherent anteriorly and laterally to the underlying tissues. It was soft and friable, and bled readily. It had infiltrated the adjacent tissues and was quite inoperable. The reasons why his first physician failed to find the growth are evident. Firstly, he did not make a digital examination. Secondly, when he introduced his instrument it was directed posteriorly towards the only portion of the lumen which was not affected by the cancerous growth and this being obscured by the bloody, purulent discharge, was not observed.

The foregoing emphasizes the importance of and the necessity for a digital examination preliminary to the instrumental, for the sensitive finger end is best for finding a growth, infiltration, or any abnormality of the mucous membrane. As Cripps puts it, it is touch only, by indicating hardness and friability, that makes the diagnosis of rectal cancer certain.

The most common point for the occurrence of malignant growths is 6 to 10 c.m. above the anal margin. A digital examination, which ordinarily gives information concerning about 10 c.m. will therefore disclose anything abnormal. When the patient is in the squatting, standing or stooping position several centimeters more are available for such examination.

Early in its development a neoplasm feels like a thickening of the submucous tissue. This indurated area is sessile, generally of a round or elliptical shape, and readily movable upon the subjacent muscular layer of the bowel. Later it becomes firmly adherent to these tissues and is felt as an annular stricture, or as a nodular, cauliflower-like, or massive infiltrating growth projecting into the lumen of the bowel. At first the overlying mucous membrane is not affected, although it may be felt to be rather rough and quite firmly adherent to the underlying tissues. Superficial ulceration soon takes place, and gradually becomes deeper, so that to the examining finger it may feel as an irregular

shaped excavation with indurated base and margins, the latter having edges rolled and everted. The long axis of the ulceration is generally transverse. By this time the bowel at the seat of the disease is very rotten and great care must be exercised that the finger or proctoscope is not thrust through it into the peritoneal cavity.

While as a general rule the growth is felt as a hard mass, yet it may feel quite soft in the case of a rectal polyp (pedunculated adenoma), which is just commencing to become malignant in its center. The gelatinous type of neoplasm in children are also rather soft.

Chronic ulcerations of the rectum should be looked upon with suspicion as they may be carcinomatous.

Proctoscopic examination should always follow the digital, and never precede it. The electrically illuminated pneumatic procto-sigmoidoscope permits of direct local inspection of the entire rectum and several inches of the pelvic colon beyond. It therefore can give valuable information concerning those tissues above the reach of the finger. Through it specimens may be excised for microscopical examination, for although some protest against this, others just as emphatically claim that it is unwise and unsafe to make a diagnosis between malignancy and benignancy without the aid of the microscope. When the disease is far advanced great care must be taken with the pneumatic proctoscope, for in the presence of old inflammatory conditions of the bowel wall, and in persons who are debilitated and have weakened and relaxed tissues there is considerable danger of rupturing the bowel if too much air is inflated.

When a growth is discovered in the rectum the first thought is usually that it is malignant. Meltzer in commenting on this remarks that there is a tendency to pathognomoncity in modern medicine, and has cited an instance where in a young, strong girl of 14 years who had a stricture of the rectum, all evidence was for malignancy. The surgeons agreed that an extensive radical operation was necessary, yet treatment for hereditary syphilis made her well without operation. This but emphasizes the necessity for a Wassermann test before arriving at a final diagnosis.

Acute inflammatory conditions producing perirectal infiltration, and having all the clinical appearances of cancer are occasionally met with. Moynihan terms this, "mimicry of malignant disease," and compares it to those tumors of the stomach which disappear after gastro-enterostomy. Robson has reported five like cases where colotomy was necessitated for supposed cancer of the rectum or sigmoid on account of obstructive symptoms. After periods ranging from one to three years he had to close up the artificial anus because of the total disappearance of the former growths. He came to the conclusion that the original condition had been due probably to a chronic infiltrating colitis associated with pouches of lodging fecal matter, or perhaps simply caused by an infection spreading through the bowel wall. Perhaps many cases of permanent cures of long standing which have been reported to follow radical operations

for rectal cancer would be found to fall in this category if the reporters were as honest, scientific, and as keenly observant as Moynihan and Robson.

Extra-rectal lesions in both male and female, by impinging upon the lumen of the bowel, may give rise to obstructive symptoms which cause one to suspect a cancerous growth in that organ. But there is rarely any discharge of blood, mucous or purulent material, and an examination of the genito-urinary system will clear up the diagnosis.

There is one fairly common condition, termed by Strauss, "sphincteric proctitis," which has been frequently observed by the writer. The mucous membrane of the anal canal is raw and congested, with excoriations or ulcerations having a tendency to bleed and to secrete mucous freely. There is annoying tenesmus, itching of the perianal skin, and boring or stabbing pains which sometimes prevent sleep and may be so severe as to cause reflex contractions in the gluteal muscles. From the severity of the symptoms and their close resemblance to those sometimes caused by cancer near the anal margin, one is often inclined to strongly suspect the presence of that dreaded disease.

A polypus or a villous papilloma may be the cause of profuse rectal hemorrhage. The last mentioned growth generally secretes a large amount of watery fluid which produces frequent evacuation of the bowels. A digital examination will discover no induration in either.

A well marked stricture of the rectum may offer considerable difficulty in deciding whether it is benign or malignant. If it is benign its free margin is generally clear cut, quite firm, and does not bleed easily. It is fairly movable unless of long standing when it may be quite firmly attached, such as was observed only very recently by me in a man of 52 years who had positive knowledge of his strictured rectum for the past fifteen years. The lumen of his bowel was so contracted that the only instrument which could enter it was a No. 24 urethroscope.

It is remarkable how often the proctologist sees patients who, having only slight pain or discomfort caused by one of the commoner benign lesions, are nevertheless greatly worried that they may have a cancer; whereas others are met with who are victims of the disease and yet are singularly free from any anxiety or fear about their condition. It has given the writer much pleasure and happiness to calm the fears of the former (some of whom were his colleagues), by assuring them that they were free from any trace of a growth, and to see their faces light up after the heavy burden of anxiety was lifted from their minds. It has made him sad and sick at heart when an examination disclosed the unsuspected presence of the disease and it was necessary to tell the truth to the afflicted one or those to whom he was endeared, for the news often came like a thunderbolt from out of a clear sky, bringing sudden sorrow and the disorganization of future plans and hopes.

In conclusion the writer believes and advocates that a digital and proctoscopic examination should be made in every individual giving a history of a discharge of blood, mucous or purulent material

from the rectum; persistent diarrhea; unusual constipation following previous regularity of bowel movement; pain, tenesmus, bearing down or other abnormal sensations in these parts; unaccounted for loss of weight; obscure digestive disturbances, especially when accompanied by stool irregularity; or of any symptom which could be caused reflexly by a cancerous growth. It is far better to make many seemingly unnecessary examinations and find an absence of malignancy than to look back with regret at a failure to have done so in just one instance in which, if the latent growth had been discovered early enough, a valued life might have been saved or prolonged.

PSYCHOTHERAPY IN UROLOGY.*

By VICTOR G. VEČKI, M. D., San Francisco.

Consciously or unconsciously, psychotherapy is being employed by every physician. Even a superficial study of the history of medicine will convince any one that it has been used at all times by the physicians of all nations. The methods are old; only the names are new. For the most part the methods have been rather crude, and whoever, prompted by his personal experience, tried to give some variation of psychotherapy great importance in his own practice was sure to be called a faker, an imposter. But some of the imposters and fakers were successful with many patients. The medical profession at large, however, sitting on its dignity, clad with periwig, doctor's hat and stick, or later under the atavistic influence of these signs of an exclusive rank, refuse to take notice. It is humiliating, but nevertheless true, that among the fakers a female prophet had to arise, to compel the medical profession to start an investigation and to examine one of the most powerful weapons in the fight against disease and suffering.

The representatives of urology may deem themselves safe from the encroachments of the various aberrations of the many groups of mental healers. No amount of prayer will melt a stone in the bladder, nor will it arrest tubercular and other structural changes, and their consequences in these organs; and so on with variations. But, how about the many thousands of sufferers who haunt the various offices and whom the prosperous urologists refuse to handle and others administer to with such scant results? How about the many who have had their prostate massaged, their urethra irrigated ad nauseam, dilated, burned, lacerated and otherwise maltreated, and who remain in the same, or in a worse, condition than they were when they came to seek help? Who can remain obdurate and refuse to acknowledge that something is radically wrong?

Of course, wherever the modern methods of urology are indicated, psychotherapy will have to be relegated to the furthest background, but it can very seldom be eliminated altogether. Psychotherapy is not going to replace the irrigator, the sound, the dilator, the knife, the endoscope, the cystoscope, nor any other of our almost perfect appliances. Urology, now in the foremost rank of

* Read before the annual meeting of the American Urological Association, Philadelphia, June 20, 1914.

medical specialties, does not have to pause in its onward march to the position of the most exact branch of medical science, but it will certainly only add to its tremendous usefulness by adding systematically studied psychotherapy to its armamentarium.

The number of patients applying at the urologists' offices is growing all the time, and the number of those amongst them who cannot be cured without the help of properly employed psychotherapy is considerable.

Since 1888 I have kept on using and advocating psychotherapy. At first I thought its usefulness was limited to those suffering with sexual neurasthenia, but when newer methods and means of examination began to thin the ranks of the functional diseases of the genito-urinary organs, it became obvious that psychical treatment must form, in some measure at least, the introduction and beginning of every other manner of treatment in most cases of the diseases we have to deal with.

The subject of psychotherapy in urology is immense; and I shall to-day but endeavor to formulate a few rules that my experience has taught me to adopt.

It is self-evident that in every case, first of all a correct diagnosis must be made. No treatment of any kind can be entered upon before the indication is properly established.

This being so obvious it also proves irrefutably that it is a brazen and criminal impertinence that any one should have the temerity to subject a fellow human being to any kind of mental healing without having previously mastered the knowledge necessary to discriminate between the nature of a sickness in which mental healing can accomplish anything, and other diseases where different means must be used to protect the patient against suffering or even against premature death.

Cases of genito-urinary diseases, like diseases in general, must be divided into four groups:

1. Diseases of the mind itself.
2. Diseases of bodily organs over-registered by a diseased mind.
3. Diseases of bodily organs over-registered by a healthy mind.
4. Diseases of bodily organs rightly interpreted by a normal mind.

In the first group psychotherapy alone will cure if cure there be. In the second group psychotherapy will have to take the leading part in the treatment, in the third group the minor part, and may be of little, if any, importance in the fourth group.

Whoever intends to use psychotherapy must take his time to individualize and to study every single case. Jumping at conclusions most frequently leads to errors, but the psychotherapist must not get discouraged when he finds himself on the wrong track. Things are not always quite simple, and whoever is in a hurry can accomplish nothing.

Every case must be approached with sympathy. The physician who cannot love his patient, and cannot impress his patient with the feeling that he really sympathizes with him, cannot gain his confidence and will surely fail in any psychotherapeutic endeavor.

Patience is one of the most important requirements, as in many cases results can be obtained only by degrees, and whoever attempts too much at one time, or even loses his temper, loses ground at once.

Some so-called neurasthenics can be influenced by a simple talk, an explanation of symptoms and conditions, by persuasion and suggestion; others must be taken through the intricacies of re-education, psychoanalysis, or even placed into the hypnoid, and if possible the hypnotic state.

Personally I was never able to place any one into a spectacular hypnotic or even cataleptic trance, but while not denying the possibilities in this direction, I only claim that a hypnoid condition is all that is necessary in order to obtain the very best results. While we must always individualize, it can be stated in general that the two extremes: the highly educated, scoffing skeptic and the illiterate ignorant who never heard of psychotherapy must be placed in one class, and must never be told that psychotherapy is going to be used upon them. Such people are best treated in the evening, in a darkened room where all noises can be excluded. The patient is given high-frequency or an auto-condensation treatment. The dim light of the apparatus, the muffled and monotonous sounds of the motor are a valuable introduction to get the patient under influence; finally he is either told to close his eyes or ordered to gaze upon the high-frequency electrode through which only very weak currents are passing. Talking to the patient in a gradually lower and lower tone of voice, more and more monotonously, soon brings the subject into that hypnoidal state in which any suggestion will create lasting impressions.

People of a lively or flighty temperament who are not so easily influenced should be ordered to take a long walk or some fatiguing exercise, eat a substantial dinner, and even to take a moderate amount of alcohol before the time of treatment; I never found a narcotic to be necessary.

Tactual manipulations are very seldom indicated, and must always be avoided when a homosexual individual is under treatment.

There is no necessity of testing the degree to which a patient is under the influence. An impatient operator by giving orders which the subject is able to resist loses even the small influence he might have had. One must always be satisfied with whatever can be accomplished at any single sitting, because the next time surely more will be possible.

Many physicians make the mistake of judging their patient from their own personal standpoint. The psychotherapist, however, can accomplish nothing unless he succeeds in placing himself mentally into his subject's condition. No statement, no matter how improbable or even impossible the feelings it may describe, should be disbelieved, or, what is worse, ridiculed. The patient really feels what he says he does, and if his statements are absurd and foolish he must be the first to laugh at them, and then the physician may join him.

We know nothing about the soul, but what we are used to call by this name, the person's mental make-up, "his nature that is characterized by the

attributes of self-consciousness, conscious personal identity, reason, conscience, and the higher emotion," is his own, no matter what civil or ecclesiastic authorities and law-makers may say.

We surely agree with Münsterberg, who claims that every physician and even the village doctor needs psychotherapy much more than he needs the knife and the electric current, but I think he overestimates the value of a systematic study of psychology, as a condition *sine qua non* for the psychotherapist. Psychology, no doubt, should be studied by every one who wishes to become an educated man, and uneducated people should not be admitted to the study of medicine; but psychotherapy is mostly done without much theoretical psychology, and is invariably based upon proper reasoning, supported by experience and a thorough knowledge of human nature, which after all is practical psychology. Of course, anyone attempting psychotherapy must understand the laws of association of ideas in so far as they can be formulated and understood.

The psychotherapist, however, must never forget the fact that matter must last and cannot disappear, but that the products of our mind, the ideas, volitions and emotions, our joys and sorrows, must always be born anew, and are doomed to disappear. And so long as all the products of the human mind conform to this rule all is well; but when one of them gets undue preponderance over all the others, and refuses to disappear, even to weaken and yield to others, then it is time for the psychotherapist to step in.

Tedious cases are frequent, slow progress, setbacks and even relapses must be expected; but the physician who uses rational psychotherapy never need throw up his hands, or utter a sigh of relief when the patient finally stays away or changes physicians.

Psychotherapy excludes no other rational treatment, and therefore, to adapt what Münsterberg emphasizes in general, I would say: The urologist must be much more than a psychotherapist, but whatever else he may be, he must also be a psychotherapist.

As the principal aim of psychotherapy ought to be removal of symptoms, it is clear that in urology, while very valuable, and often indispensable, it can mostly be a helpmate only, very seldom the whole.

Finally, a few typical cases:

Case 1. A California politician 50 years of age, referred by Dr. McKenney of San Francisco. Several years ago a urethral stricture permitting the passing of a sound French No. 14 was found by another physician. The dilating which was advised not having been to the taste of this patient, he took to "Christian Science." After years of faithful adherence to this kind of mental healing he finally had an impermeable stricture, which compelled me to open the bladder for drainage and subsequent gradual dilatation of the urethra. It took eight weeks of hospital treatment to make the patient's life tolerable. This case is a fair example of what "Christian Science" does for a stricture.

Case 2. A barber 30 years of age presented himself with a hydrocele. History and examination demonstrated syphilis. He was treated with intramuscular injections of calomel, until all other

symptoms disappeared. The radical operation for hydrocele was postponed by the patient. Three months after, upon the occasion of an accidental meeting, the man, with a triumphant smile, declared himself to be perfectly well, having taken up "Christian Science." When I asked how the hydrocele was, he simply announced, "I pay no attention to that."

One year later he returned to my office because there was a hole in his palate, and the undue communication between the nose and mouth would not yield to prayer, nor to some homeopathic pills he finally, in a compromise with his conscience, condescended to take. Eight intramuscular calomel injections healed the gumma, and convinced this patient that "Christian Science" is not the thing for syphilis.

Case 3. An undertaker 32 years old consulted me in March, 1909, complaining of all kinds of sexual disturbances. With the exception of a slight prostaticorrhea, everything was found normal, the urethra permitted the easy passage of a sound French No. 29. The prostaticorrhea was due to undue sexual excitement in the company of a pretty fiancée. I made the mistake frankly to advise psychic treatment. The patient, highly neurasthenic, excited and gloomy, refused with scorn; he wanted energetic treatment and instrumentation, which he really got somewhere else. Before Christmas of the same year he returned under my care. Vividly he described what was done to him; the urethra was dilated several times with a Kollmann's dilator—it did not hurt, it only bled every time, and subsequent irrigations were very painful. This time the urethra was passable for a sound French No. 20 only. It took months of local treatment, mostly under Goldschmidt's anterior urethroscope, to repair the damage done. Psychic treatment given without the patient being aware of it restored the peace of mind. He is now a husband and a father.

Case No. 4. A capitalist 28 years old, who inherited from his parents a great deal of money and a somewhat fuddled brain, was under treatment for years, going from benevolent family physician to quack, then again from one of the best known urologists to another. Every course of treatment ended in a row, some physicians turned the patient down, others were turned down by him. The shreds in the urine and some moisture in the urethra would not disappear. Some of the treatments made these symptoms a little better; most of the treatments, however, made conditions temporarily worse. Thorough examination revealed normal conditions, and no pathogenic germs. Observation and rest from all local treatments were at first suggested, the harmlessness of the discharge was repeatedly demonstrated upon rabbits' eyes, and under general treatment for a beginning obesity, and suggestions given in the auto-condensation chair the patient was restored to all the usefulness of which he is capable.

Case 5. An ignorant laborer from the south of Europe, 49 years old, began to do some promiscuous reading when he accumulated a few hundred dollars in the U. S. This was his misfortune. Reading in a foreign paper one of the alluring advertisements, and discovering that he suffered from some of the suggested symptoms, he fell into the hands of the advertising quack. The first scoundrel frightened him radically. From that time on, this otherwise very efficient laborer worked for the quacks. As soon as he had a few dollars he would undergo some treatment or another; he was dismissed as cured as soon as his money was gone, but the same symptoms, that were explained to him to be so very dangerous always returned. He dreaded to go home to his family, as he was sure to infect his wife and disgrace himself.

Examination proved that there was absolutely nothing the matter with him. The high-frequency urethral electrode introduced just below the fossa navicularis was the means used to bring the patient

under proper conditions preparatory to the hypnoid state. Suggestions of perfect health and disregarding of quasi-symptoms returned this man to uninterrupted work, and in the last two years quacks have not received any of his hard-earned money.

This case is a typical one, from a large number of observations among ignorant foreigners. The quacks, driven from the columns of our leading papers, concentrate their efforts in obscure foreign sheets, where, hidden from discovery by the proper authorities, they publish most shameless stuff, and find easy victims amongst the absolutely inexperienced, friendless and ignorant foreigners. I have observed several cases where some of these victims were made absolutely useless and helpless and have ended in the poorhouse, the insane asylum or other charitable institutions; some having been sent home by means of collections among their more fortunate countrymen.

Case 6. An instructor in one of our leading educational institutions consulted me and confessed to what he called an obsession, an irresistible desire to spank and whip well-dressed young girls. There was never any desire to do any real harm, but the case was plainly a mild form of Sadism. Some years ago he had to quit under a cloud a high-school position, and was at that time accused of brutality and abuse of authority, his case not having been properly interpreted by his accusers and he naturally preferring to hide his infirmity. Psycho-analysis brought out a suppressed emotion dating back to the patient's childhood, and suggestion in the hypnoid state freed him completely of his perverse craving. He returned to his duties without the former constant dread of the penitentiary.

Case 7. A frail and dainty little French woman, 30 years of age, was, when nursing her only child, infected by her husband with syphilis. She in turn infected the child. The whole family was treated in Paris with intramuscular injections of benzoate of mercury for a long period, and neither mother nor child presented any symptoms when examined five years after the primary infection. She complained of a strange desire to harm or even to kill her daughter, whenever she was left alone with her. Though the woman was always able to suppress this unnatural desire she was afraid that a time might come when she would not be able to resist that impulse, and might do harm to the little girl whom she loved to distraction. On the verge of committing suicide, she consulted me in 1907. Psycho-analysis explained the underlying cause. When first informed of the character of the disease with which she had innocently infected her child, the idea came suddenly that the child would be better dead, but this idea was suppressed at once. Easily and repeatedly the patient was placed in the hypnoid state, and the suggestion that her child is now well and ought to live and grow was impressed upon her mind. When last seen early this year the woman declared she could not understand how she ever could have had any such foolish desire.

PHOTOGRAPHY IN RELATION TO THE MEDICAL SCIENCES.*

By H. D'ARCY POWER, M. D., San Francisco.

It is remarkable how in an age when everybody writes, and the most trivial subjects receive more than their share of attention, it still occurs that matters of great and practical importance are without an available literature. Such is the case in respect to the technics of photography when applied to the needs of the physician and surgeon. Every medical publication throughout the

world is more or less photographically illustrated but we all are painfully aware how commonly these pictures fail to convey the author's conception.

For many years, photography, both as an art and a science, has occupied most of my leisure time, and for the last fifteen years, I have constantly used it, as a matter of routine, in my medical practice for purposes of record and investigation. The technical knowledge I have thus gained has always been at the service of my colleagues, and the increasing frequency with which it has been called into requisition leads me to believe that a short description of important points may be welcome to those using the camera, whilst a knowledge of its many fields of value in medical practice may lead others to acquire facility in its use. To provide full instruction to the uninitiated would demand your attention over a course of lectures. I must therefore assume a general photographic knowledge on your part.

There are four specific fields of medical photography to which I invite your attention:

1. Clinical Recording and Illustration.
2. Photomicrography.
3. Radiography.
4. Kinematography.

My remarks will apply chiefly to the first and second—in which my experience is greatest.

Clinical Records.—It is of the greatest importance, both to our patients and ourselves, that the physical condition of the former be accurately recorded at the beginning of, and during, treatment. However naturally good and well trained our memories, the ever shifting picture of physical change, often extended over long periods of time, is rarely retained in our minds with accuracy, and our beliefs are more often the product of "Einbildung" than "Vorstellungsdrift."

The best of anamnesis, aided by diagrams, fails in depicting facial expression; and descriptions of skin texture, vascular turgidity, general malnutrition, etc., are only approximations, dependent on the literary skill of the recorder. Lastly be it noted that only a small proportion of men in general practice keep serviceable records of any kind. It is to the betterment of these conditions that I advocate the use of photography.

In making a photograph there are certain requirements to be fulfilled wherein, if there be failure, the resulting picture will be useless or even misleading. We must secure

1. Correct drawing
2. Correct texture
3. Correct Scale
4. Uniformity of view point.

It may be said that the lens always draws correctly. This is only true if the lens be correctly placed. If there be any lack of parallelism between the planes of the picture and that of the lens, the drawing will be proportionately false. Correct drawing in normal perspective is only obtained when the camera stands on a level base opposite the centre of the object to be photographed. This requirement must be strictly maintained when the object photographed occupies the

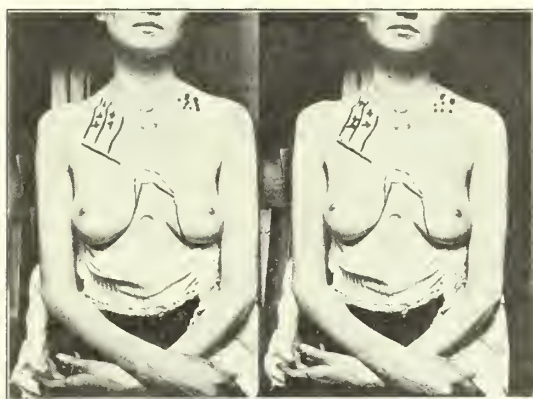
* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

greater part of the visual (lens) field, but in the case of small objects, such as skin lesions, it is of minor importance. Many photographs published in books and journals err greatly in this matter.

Correct texture. The production of texture is the glory of photography. No other process can approach it in accuracy, leaving out facility, but the majority of photographic reproductions in books and journals are very defective. Success is a matter of lighting and development, and will be dealt with under those headings.

Uniformity of view point is essential if successive photographs are to be compared; this means that conditions must be standardized in place of the usual happy-go-lucky way in which photographs are taken.

I will now offer a few practical suggestions:



Pulmonary Tuberculosis.

///=Increased Conduction.

xx=Crepitus.

...=Dullness.

Example of Clinical Record—Scale 1/10th.

Clinical Photographs.—I wish here to plead for the photograph as the routine method for keeping records. If a photograph can be taken in less than five minutes, and is capable of giving you a record of the patient's physique, of facial expression, skin texture, anatomical changes, and such internal conditions as the physician can depict by marks on the surface; and further, if such a photograph can be compared with others taken subsequently, with the power of accurately measuring interim changes, then this photograph is not only a better recorder of facts, but a great economizer of time. And this is undoubtedly the case. I have for years so kept my own records, and be the case one of lung, heart or abdominal disease, it is my habit to depict on the skin surface with brush or pencil by arbitrary signs the results of my examination. Thus, in lung disease, I indicate dullness by dots closely or widely placed, crepitus by crosses, large or small, increased sound conduction by lines. The resulting photograph is a much more useful record than the regulation printed diagram.

I will now briefly describe the essential points in the technic. These will equally apply to photographs of surgical procedures and of pathologi-

cal specimens. In all cases we must secure the following results:

1. Accurate drawing.
2. Perfect texture.
3. Correct scale throughout.

Accurate drawing is dependent on a correct relation of the camera to subject. The greater number of the photographs that I see taken by medical men show incorrect drawing from failure to correctly place object and camera. The essential requirement is that the plane of the lens and that of the object shall be parallel to one another. If the object is to be taken from above, the camera must be suspended above it; if vertical, the camera likewise. The average photograph, such as the surface of chest or abdomen, is best taken by resting the camera on a flat surface such as the table, or on a camera stand with a fixed base. The centre of the lens should be opposite the centre of the area to be photographed. If the plane recede, then the camera should be tipped to an equal angle. Probably the most difficult matter is to so place the object, or part of the body, that the same position can easily be repeated on a future occasion. For the whole body this is comparatively easy. The patient should stand against the wall, with heels and occiput in contact. This will necessitate the shoulders being thrown out.

The abdomen is preferably taken in the same posture, but for tumors, the body should be on the back and the camera supported above the patient.

The thorax can well be taken with the patient sitting in a chair. This is my own daily practice. Care is needed that the spine is held rigid, that the shoulders are at the same level and the arms parallel. The position of the head should be such that the ears are equally visible on either side, and the root of the nose on a level with the lobes of the ears. Though this may give slightly altered relations between different individuals, it secures equality of position in succeeding photographs of the same. Photographs to show pathologic conditions of the extremities are difficult and the position must be determined by the peculiarities of the case. For the hands a piece of (corrugated) pasteboard placed in front of the chest on which the hands are extended affords one of the most satisfactory and simply attained arrangements.

Finally, we must remember that with moving surfaces, such as those of the chest and abdomen, the drawing will vary with the phase of respiration. Therefore the practice of always exposing at a given stage should be adopted. My rule is to call for three deep respirations, then stop the patient midway in expiration and direct the breath to be held during the exposure.

Modeling and Texture. Lighting.—While drawing is chiefly dependent on posture, texture and surface relief are chiefly a matter of illumination. Principles, not rules, are our only guides here. Surface relief is dependent on the formation of shadows. A considerable elevation of the chest or abdomen will entirely fail to show on a photograph if the light falls on it at right angles, so

that no shadow is formed. It may, on the other hand, be greatly exaggerated by a too oblique illumination and the only rule is so to place the patient in reference to the light that the desired effect is plainly visible on the ground glass, or to the eye of the worker when viewed from a position near the lens. Sharpness of texture is not only a matter of direction of light, but also of diffusion; the nearer the source of illumination approaches a point the better will texture be represented. For this reason, I am much in favor of the use of flashlight for photographs, such as those of skin, in which texture is the main consideration. Furthermore, the use of flashlight permits of photographs of moving surfaces, such

employ a small camera— $4\frac{1}{2}$ by $3\frac{1}{2}$ inches. On the ground glass a six foot man would occupy 3 inches at a reduction of $\frac{1}{20}$ th. The thorax, abdomen or head can be taken at $\frac{1}{5}$ th, or better, $\frac{1}{6}$ th, and skin texture, small tumors, tongue, eyes, etc., at $\frac{1}{4}$ th. Place on a well lighted wall a three foot flat rule. Set up the camera in front of it and move it until the image of the rod in sharp focus occupies $1\frac{1}{2}$ inches on the ground glass. Mark on the base-board the position of the camera. Measure the distance between the camera and the rod and inscribe this beside the mark on the base-board. Now approach the rod until its image covers 3 inches in focus. Again mark base-board and measure and inscribe dis-



Stereoscopy in Skin Disease.
Scale $\frac{1}{4}$.

as the tongue. With the enclosed flash, such as that of the Victor apparatus and others, it is possible to use the apparatus without causing any smoke in the office or ward.

Scale.—In the use of photography for scientific purposes, no point is more important than the provision for accurate measurement of the parts depicted. There are two ways of obtaining this result. One is to take the whole picture at a given scale of reduction; the other is to include a measuring rod or tape in the group by reference to which the size of parts may be determined. As usually employed, both methods frequently fail in accuracy. In the first case, with a short focus lens used at a short distance from an object such as the human body, the far and near planes depart considerably from the standard of reduction, which must necessarily have been determined for a flat surface. By the second method, truth is only obtained by applying the image of the measure to the plane of the surface on which it is lying. Also, I would note that the common practice of using the regulation tape measure gives an image that is frequently illegible. The following method will give good general accuracy and provide for the correction of any secondary error. First, arrange the camera to take at four scales of reduction. These will depend on the size of camera used. I

tance of rod from camera. Repeat this procedure so that 18 inches on the rod occupies 3 inches on the ground glass, and lastly that 12 inches occupies the same. When the base-board has been marked and the distances recorded, we are saved all future focusing troubles—and these are among the commoner causes of failure—and our images will in a general way be true to the chosen scale. Only in the case of the larger images, the $\frac{1}{6}$ th and $\frac{1}{4}$ th, it may happen that if the image is that of a receding plane such as the thorax, a difference of scale between the near and far planes will appear. If only one of these is required in the record, we simply measure our distance from the lens to the desired surface and that will then be in true measure. But if the record is to include both far and near planes, we must take our measure to a point $\frac{1}{3}$ behind the front plane and secure depth of focus by stopping down the lens. The resulting picture will look correct but will measure too much in the near plane and too little in the distant one. Usually the error is trifling, but its correction is very simply provided for. If a strip of 1 inch surgical plaster be stuck on the body in the direction of the receding plane, the variation in the width of its image will provide the means of correcting any error due to perspective. And here let me say that those who do not

care to fix their cameras for definite reductions can always insure a means of correct measurement by the use of surgical plaster. It is cut by machinery to accurate width. A piece of known width stuck on the surface to be photographed provides a sure scale. Personally, I keep in my card case a few pieces of lantern slide binding, cut to 4 inches (10 cm.) long. It is $\frac{1}{2}$ inch wide and very black. It always photographs distinctly and is most useful.

General Technics.—I wish to conclude this paper by a few remarks on camera, plates, and papers. It is an entire mistake to imagine that expensive apparatus is essential or even valuable in medical photography. The little Brownie Stereo camera, costing only a few dollars, whose lenses from the opticians' viewpoint are very defective, is responsible for nearly all the photographs, stereograms, and lantern slides I have exhibited. The fact is that in order to get the depth of focus we need, we are compelled to work with short focus lenses at small aperture, and under such conditions any kind of a lens will give sharp definition. There are just two conditions really essential. The camera should be strong and capable of enough extension to work at a scale of reduction of $\frac{1}{4}$ the actual size. Many useful cheap cameras fail in this latter respect but can be so used by the use of a supplemental lens. Such lenses are sold under the name of "portrait attachments", or can be readily ground from ordinary periscopic spectacle lenses, +1 or 2 being usually sufficient. A focusing screen is not at all essential. It is much better to work by measurement at fixed distances than to attempt to focus. If the camera does not possess a focusing screen it will be necessary to remove the back and place a piece of ground glass in its place while making the observations previously described. All plate cameras have, however, a focusing screen, and I strongly advise the use of plates in preference to films. There are several reasons for this. Plates are easier to handle, they can be obtained in various grades and with special qualities. Thus, much of the material we photograph is yellow or reddish in tint. The ordinary plate is quite insensitive to these colors, and the plate should be either an ortho or panchromatic plate, which is specially sensitized. It is also desirable to use what are known as double coated plates. I use the "Isonon" which is yellow sensitive and double coated. It is best used with a four time color screen, which cuts out the excess of blue rays. In development the object should be to obtain good detail and avoid unnatural contrasts. This is best attained by full exposure and development with a rather weak developer. I use Rodinal, which is the simplest of all preparations to employ. Prints are best made on Glossy Bromide Paper, which is not so contrasty as the gaslight varieties. There is a current superstition that prints for half-tone reproduction must be made on "Solio"—this is a thing of the past.

Stereograms.—It stands to reason that records presenting the aspect of three dimensions afford much more information than pictures in two.

There are many conditions that are very difficult or impossible to show by an ordinary photograph that are perfectly clear in a stereogram; thus, among skin lesions, macules and flat papules are cases in point; varying muscle tonus as seen in facial palsy; surface protrusions, as in aneurysms and hernias, often quite unrecognizable in a flat picture, are shown in full relief in a stereogram. These facts are slowly receiving recognition in this country and the *Stereoclinic*, edited by Dr. Howard Kelly, as well as many European works stereoscopically illustrated, are evidences of a change in method that, I believe, is destined to be universal. The chief difficulty at the present time is in the matter of apparatus. The average stereoscopic camera is provided with short focus lenses and does not take objects nearer the camera than six feet. At this distance the scale of reduction is about $\frac{1}{20}$ and this is altogether too small to show skin conditions or small changes of contour. If the bellows length is increased and the object approached closer, the angle of divergence between the two images becomes so acute that they fall outside the limits of the plate. Some three years ago, I showed (*vide Camera Craft*) how this can be rectified by the addition of +2 spectacle lens and No. 6 prisms. With a Brownie Stereoscopic camera so modified, I take all my ordinary clinical photographs with ease and rapidity. I can take at any desired scale of reduction from $\frac{1}{20}$ to $\frac{1}{3}$ natural size. The resulting pictures can be viewed with a stereoscope, or, with a little practice, seen in relief by the unaided eye.



Clinical Record.
Hepatic Ascites—Scale $\frac{1}{10}$ th.

Autochromes.—Very few seem to realize the great advantages of the autochrome plate. Not only is it of value in such obvious conditions as those presented by diseases of the skin, but it is the best of all means for recording those subtle and often indescribable appearances to which we apply the term "cachexia." The kidney face, the dusky blush of diabetes, the difference between the capillary turgescence of a mitral lesion and the hectic of tuberculosis, the tint of Addison's disease as compared with other pigmentations, the tints of chlorosis and pernicious anemia, even the variations due to alteration in general health are recordable and may afford the most convincing of all demonstrations of the success of treatment. An

experience of autochrome work extending over hundreds of exposures from the time of the arrival of the first box of plates on this coast, has convinced me that a strict adherence to the directions of the makers as first promulgated offers the best means of success. The *sine qua non* of success in color photography is, first, always to work under fixed conditions; second, is always make two exposures and develop the second exposure in the light of the experience gained by the first. My best results are obtained by exposure in direct sunlight—3 to 6 seconds—and pyro-ammonia development. A new color plate made by the Paget Company offers the advantage of being more rapid and better for projection.

Photomicrographs.—The making of photomicrographs may not at present be a necessary part of the medical man's duties, but as we grow in the habit of relying on pathological data we shall more and more desire personally to interpret our material and keep records thereof. I am therefore tempted to endeavor to prove to all of you that the making of photomicrographs is a simple process, and to draw the attention of those members of the Society who are engaged in teaching histology and pathology to a new method of making photomicrographic slides for hand inspection and projection, that offers advantages over the regulation slide.

The average man who has read descriptions of the technic of making a photomicrograph is usually obsessed with visions of complicated apparatus which may be obtained for \$500 or so and still more complicated procedures to be applied to the same. The light has to pass through monochromatic-special filters for given stains. Illumination must be what is called "critical" and so on. All this is very nice and for certain lines of work possibly necessary. But I have here on the table (and some I will now project on the screen) 100 specimens of photomicrographs on glass of stained tissues, all the common organs and diseases under all kinds of staining and magnification, from 10 diameters to 1000, and they have all been made by uniting the tube of an ordinary microscope to an ordinary 5x7 camera by means of a piece of pasteboard that is not even light tight, and with no other illumination than that of an ordinary Tungsten incandescent bulb; often without a condenser. I will now set the apparatus up and will make the negative for a photomicrograph for you in the course of a few minutes. As to quality, the specimens here shown must be the answer. All that the best illustrations show are here present and many of these plates are indistinguishable from the microscopic fields of which they are the exact duplicates. I thus demonstrate to you that all of you can make photomicrographs with ease, and with everyday apparatus. The lantern slides made from these negatives are made by a modification of the Traube process described by me in *Camera Craft*.

I shall be happy to help any one desiring to use the same.

REPORT OF A CASE OF OIDIOMYCOSIS.*

By W. W. ROBLEE, M. D., Riverside.

Patient: Full-blooded Yuma Indian, age eighteen, reported at the morning clinic at the Sherman Institute Indian School, October 1, 1913. He complained of a sensitive spot over the outer side of the head of the left tibia; some swelling was present and no fluctuation. There was no history of an injury to the knee although he had been doing a great deal of running prior to the development of his disability. In other respects the boy was in good physical condition. So far as he remembered when questioned later, he had had no cough or other disability. He had always been a hearty, rugged lad. The knee was bandaged; he was advised to use it as little as possible and ordered to report regularly for observation. The soreness seemed to gradually increase; he was given a pair of crutches and kept at the hospital. A tentative diagnosis of tuberculosis of the affected part was made and he was placed on Syrup Ferrous Iodide internally.

He developed an irregular temperature and during the first week in January fluctuation was detected in the swelling. I made a small incision under ethyl chloride local anesthesia, expecting to evacuate a cold abscess, but very much to my surprise nothing but venous blood, both liquid and clotted, was discharged. The swelling became greater; there was a constant bloody oozing from the small opening and on January 6th, under general anesthesia, I made two free incisions over

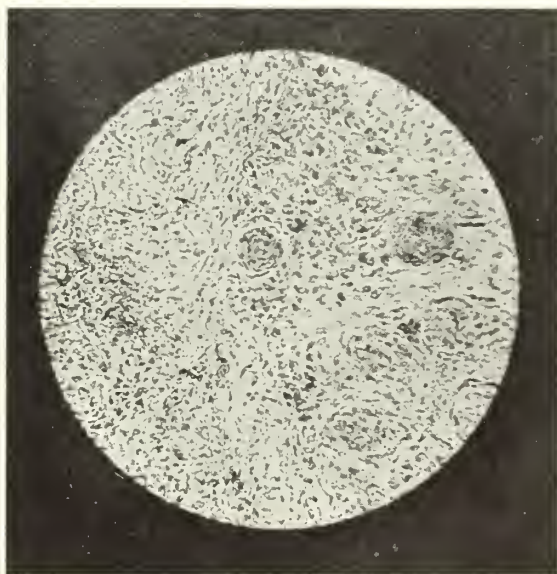


Plate I.

the head of the tibia. Large quantities of blood clots, were scraped out with the gloved finger, a soft granulating mass was found subcutaneously but the bone was found not to be involved. At no point was the periosteum eroded. I packed the cavity and had no more free hemorrhage but there was, from that time on, a serosanguinous discharge from the wound. The edges of the linear incision on the outside of the leg gradually gave way until when last seen by me, there was a round ulcerated surface three by 2½ inches in diameter. About ten days later, a fluctuating mass developed in the right axilla and another over the left clavicle. These were incised; the axilla swelling contained blood clots, but the clavicular swelling contained creamy pus.

The boy was losing steadily in weight and was

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running a low, irregular temperature, ranging from 98° to 101°, with an occasional jump to 103°. Specimens of the granulation tissue showed granulomata with giant cells and I continued to call it a tuberculous infection. Happening to be in the office of my friend, Dr. Brem, I mentioned the case to him, the hemorrhage feature of the case having puzzled me from a clinical standpoint, and he mentioned having seen a similar condition in a case of coccidioidal granuloma. Upon returning home, I at once began investigating the case from that standpoint and, with the help of Dr. Thos. R. Griffith, who made and stained numerous tissue slides for me, which were found to contain the

in various portions of the body, some eleven in all while under my observation. These were not painful; all when incised discharged a thick, creamy pus, except three; the original sore on the left knee, the one in the right axilla and one to the left of the spine opposite the last dorsal vertebra. These three were of the hemorrhagic type. The one on the back bled so freely one night that the nurse called me, considerably alarmed over the boy's condition. These three sores all developed circular ulcers. The tendency of the other abscesses was to heal; the hemorrhagic sores showed no such tendency. I placed the boy on generous doses

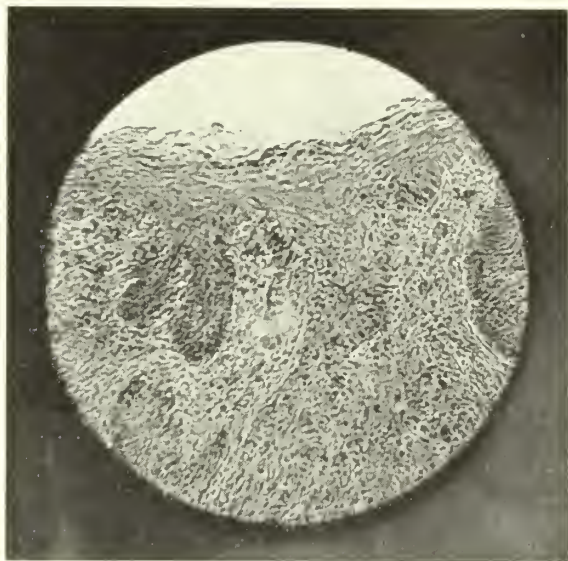


Plate II.



Plate IV.

Blood Culture of Patient With Oidiomycosis.



Plate III.

Mycelial Form of Oidia on Artificial (Solid) Culture Media.



Plate V.

Direct Smear of Blood From Patient With Oidiomycosis.

encapsulated organisms, and having found the mycelial growth in a culture, we came to the conclusion that we had a case of oidial infection. Having read with much interest a reprint of an article on infections by saccharomycetes, by Dr. Lorena Breed, of Pomona, I called her attention to the case. She at once took a great interest in it and most of the laboratory findings submitted herewith were the result of her work.

The boy went on developing superficial abscesses

of K. I. and the pus from the abscesses showing a staphylococcus albus infection, a vaccine was made by Dr. Breed, which was administered to him. He continued to decline, and as it is the policy of the Indian service to send children, who are expected to die, home, if possible, he was sent to his home in Yuma, February 18th, and a report from there stated that he died one month later.

LABORATORY REPORT.

Skin sections taken from edge of wound showed:

1. Numerous double encapsulated bodies filled with spore-like granules. These vary greatly in size and are identical in appearance with those described by Rixford and later by Ophüls in the original reports on coccidioidal granuloma. Plate I.

2. Numerous giant cells and granulomatous areas identical with those found in tuberculosis.

3. A dipping in of the epithelial layers which is so well marked that it could easily be mistaken for epithelioma. In fact, slides from epithelioma placed by the side of this specimen showed an identical arrangement except that no detached epithelial pearls were observed. Plate II.

In none of the tissue sections have we seen a positive budding process as described in blastomycosis, or a breaking of the capsule with a letting free of the contained granules as described by Rixford in coccidioidal granuloma, although in one

very tenacious growth which, under the microscope, showed a mycelial development. Plate III.

Blood culture in glucose bouillon was positive and gave a coarse budding growth. Plate IV.

This blood culture was controlled very carefully in so far as contaminations of media are concerned. Tests were made with normal blood, the culture media was examined and no trace of a saccharomycete was found in any specimens except those taken from this patient.

Blood Examination.

Hemoglobin	30%
Erythrocytes	3,100,000
White cells	18,000
Leukocytes	70%
Lymphocytes	30%
Coagulation time	24 minutes

This developed one of the very interesting features connected with this case. There was found all through this boy's blood, and showing clearly in the stained smear, numerous coarse granular bodies that are identical in appearance with the saccharomycetes. Plate V. The boy's ear was washed with alcohol and the smear very carefully taken. The stains were tried on other blood specimens and these granular bodies were not found therein, and in so far as the exercise of extreme care would eliminate outside contamination of these specimens, it is certain that the blood on the slide is as it came from the boy.

We are prepared to say quite positively that this is a saccharomycete circulating in the boy's blood, and it is a point that should be noted in the study of future cases of this kind, as heretofore no such blood conditions have been reported. Coagulation time was 24 minutes plus. This probably accounts for the hemorrhagic tendency found in this case and is a point not heretofore brought out in the consideration of these cases. The new points observed in this case and which I believe justify its report are:

1st. No apparent atrium of infection. The boy at no time had a cough or any chest symptoms and no wound about the knee so far as he remembers.

2nd. The hemorrhagic condition found upon incising these swellings.

3rd. The tendency for the ulcers to enlarge. Plate VI.

4th. The close resemblance of the skin sections to both tuberculosis and epithelioma.

5th. The apparent finding of a saccharomycete in the circulating blood, which brings up the question of relationship as between the oïdia and the yeasts. One very soon becomes lost in a maze of uncertainty when he undertakes to study out the nomenclature of these organisms. The botanists do not agree and the medical men are worse mixed than are the botanists. Any point which may throw light upon the family relationship is well worth careful elucidation.

6th. The very long coagulation time of the blood, which probably accounts for the tendency toward hemorrhages.

7th. I am convinced that infections by the yeast and related organisms are more frequent than we have heretofore believed. Doubtless, many cases are tagged "tuberculosis" and die undiagnosed, as probably would have been the case with this boy but for the chance conversation with Dr. Brem, who stated that he was mistaken for some time in the case that he had seen. Dr. Breed has given especial attention to these organisms and has found them very frequently in cases referred to her in Pomona, and she feels that they are responsible for many heretofore unexplained cases. A reading of her monograph on the subject is well worth while.

In conclusion, I want to thank both Dr. Breed and Dr. Griffith for their great assistance in working up this case.



Plate VI.

Photograph of Knee of Patient With Oidiomycosis.

or two places some of the granular organisms appear to have broken through. It is difficult to be certain whether the condition observed may not be due to the handling of the tissues necessary for sectioning. Further animal experiments are being made to settle this point.

Animal Experiment.

Rabbit inoculated intra-peritoneally developed a gradual loss in weight and strength. It was killed in four weeks and the liver was found to be covered with granulomata.

Cultures—Blood serum with Agar gave a grayish,

PERFORATED DUODENAL—ULCER REPORT OF AN UNUSUAL CASE.

By B. J. O'NEILL, M. D., and G. T. COURTENAY, M. D., San Diego, Calif.

Since the first recorded case of successful operation for perforated duodenal ulcer by Dean¹ in 1894, this surgical catastrophe has gradually emerged from a state of diagnostic obscurity until at the present time it must be regarded as one of the foremost and most formidable of the "acute abdominal accidents" with which the surgeon has to deal. There is perhaps no other acute lesion in the upper abdomen in which the clinical findings and historical data permit of a positive diagnosis in so many instances, and surely there is none in which it is more vitally imperative that the surgeon recognize that he is confronted by a grave surgical emergency.

Moynihan's² most exhaustive work on duodenal ulcer so completely covers the entire subject that no attempt will be made in this paper carefully to review the literature, and for such information reference is made to the above named work. However, we feel justified in reporting the following case, not alone on account of the completeness of the record, including diagnosis both before and after rupture, supplemented by operative and autopsy findings; but also, and more especially because of the size of the perforation and the length of time the patient survived the operation, both of which are unusual in surgical records, considering the length of time that had elapsed between perforation and operation:

Case history: Patient referred by Dr. W. W. Crawford. C. E. H., male, 41 years old, commission merchant, Swedish-American.

Present complaint: Patient complains of severe pain in upper abdomen, from which he has been suffering for about 40 hours. He states that the onset was sudden and the pain from the beginning agonizing and most intense, having subsided in severity during the last 12 hours. Soon after the onset he vomited about a cupful of "blood-stained, sticky material," and has felt greatly nauseated since. He is thirsty and feels very weak. Two days prior to the onset of the severe pain he had been ordered to bed by Dr. Crawford on account of a steady pain in the region of the liver and vomiting. Since that time he has been on rectal alimentation, taking nothing by mouth.

Previous history: Until about six years ago patient had always been well. At that time he began to be troubled with vague pains in the upper abdomen and a sense of soreness about three hours after eating. These pains gradually grew more severe and at times were accompanied by vomiting. Pain at bedtime became almost constant and he frequently ate a cracker or piece of bread at that hour for relief. About five years ago, or one year after the beginning of the pains, he had a severe hematemesis in which he states that he vomited about two quarts of blood. At that time he spent several days in bed, was very weak, and was treated by a physician for "gastralgia." Since that time he has suffered more or less and about every three months he has had an acute attack of severe pain, vomiting, sometimes of blood, but usually without, and melena. During these attacks he always lost considerable weight due to fasting, but has gained just as fast afterwards. Two years ago, during one of these attacks, he began to use

gastric lavage as a daily treatment, but during the last few months this has failed to give him its former relief. During the last such attack previous to the present trouble, one of us (Dr. O'Neill) saw the patient in consultation with Dr. Crawford, made a diagnosis of duodenal ulcer and advised operation, to which the patient refused to submit.

Habits: Drinks beer and smokes in moderation. Has always been a hearty eater, but prefers plain food.

Family history: Negative.

During the present illness, at the time of seizure with the violent pain in the abdomen, being unable to reach Dr. Crawford, he was seen by a substitute who gave him morphine for the pain, and he was not seen by Dr. Crawford until some 40 hours after the onset. We were then called at once and the following are the notes of our examination:

Examination. Patient in dorsal posture with knees drawn up; is pale and appears drowsy. Pulse 110, resp. 30, temp. 101.8°. The sclera has a sub-icteric tinge; tongue dry and coated; chest negative. Abdomen does not appear distended and there is no visible peristalsis. Palpation reveals a diffuse tenderness, accentuated in the right hypochondrium, with a definite rigidity of the right rectus, more pronounced in its upper half. Upon combined palpation and auscultation a distinct "gurgling" can be heard in the pyloric region. W. B. C. 16,400. A diagnosis of ruptured duodenal ulcer was made without hesitation and patient immediately subjected to laparotomy.

Operation: Drs. Courtenay, O'Neill and Lewis. Ether anesthesia. Right rectus incision. The pyloric end of the stomach is concealed by an adherent mass of omentum. Immediately upon its liberation there is an escape of gas, and a hard tumor, about the size of a small apple and densely adherent to surrounding structures, is palpable at the pyloric outlet. Delivery is accompanied by a flow of odorous purulent material, and, on the under surface of the duodenum, extending from the pyloric junction to a point about two inches distal to it, is found a perforation, so large as easily to admit the four fingers of the operator. So great was the induration and thickening of the bowel wall that, when plication had finally been accomplished, the pylorus was almost completely occluded. A posterior gastro-jejunostomy was now made and the abdomen closed with gauze drainage.

Post-operative: The patient was placed in a semi-sitting posture and reacted well. Four hours after operation fluids by mouth were started in very small amounts and he was also given salines per rectum during the first 12 hours. For the next 48 hours his condition improved markedly, and semi-solid food was now given and retained. Drainage was now removed. Bowels moved normally and by the aid of enemata during the days following. A progressive improvement in patient's general condition was evidence of a complete patency and function of the newly-formed channel via the jejunum. On the fifth day the discharge from the wound, which had been bile-stained and small in amount, became more copious and of a sour, fetid odor. A fistulous opening was suspected and the suspicion was confirmed when methylene blue, given by mouth, colored the discharge in about one hour. From now on the man's general condition grew progressively worse owing to his inability to retain nourishment. On the eighth post-operative day his pulse was 120, resp. 26, temp. 99.8°, W. B. C. 11,800, and patient was very pallid and weak. Intervention with a view to closing the fistulous tract was determined upon, and as a preliminary measure a direct transfusion of blood from his 18-year-old daughter was performed. This was readily accomplished by suturing the donor's radial artery to the recipient's median vein, following the technic described by Carrell.³ Circulation was allowed for fifteen minutes, and the immediate result

* Read at regular meeting of San Diego County Medical Society, February 3, 1914.

was extremely gratifying, as evidenced by the patient's change in color and the immediate improvement in the volume and quality of pulse and the character of respirations. Operation was now proceeded with.

Second operation: Opening through recent incision. Healing good and quite normal. The site of injury is entirely walled off by dense masses of omentum. Upon exposure of the pylorus it is now found almost completely severed from the gut and leaking only from a new perforation just above our former line of suture, which is entirely intact and shows good union throughout. In the duodenum the same is the case, the original perforation being completely closed, but leakage now appearing from a large opening just distal to the former one. Both fresh perforations were closed as before and covered with omentum.

Examination of the gastro-jejunostomy reveals a perfect union and complete patency. There is no gross reaction nor any adhesions here. Abdomen closed with through and through sutures and gauze drainage from original incision. Pulse 140, temp. 98°, resp. 28. The patient rallied slightly, but succumbed in a state of shock six hours after the operation.

Post-mortem: The stomach is slightly dilated but empty. Pylorus and duodenum as previously described. The perforation in the duodenum is found to reach within two inches of the beginning of the jejunum. Under surface of liver covered with fresh adhesions and gall-bladder bound down by more ancient ones. The pancreatic duct is dilated and investigation shows it to be adherent to the gut so as to cause a stricture of the duct. The pancreas itself is enlarged, hard and congested.

Remarks: From the time of the primary exploration we were surprised at the entire absence of fat necrosis in the abdominal tissues. In a case reported by Richter⁴ of perforation about one-half inch from the opening of the duct, this was a pronounced feature. He was also able to produce it experimentally in animals by perforating the duodenum at a similar point and closing the abdomen for from 24 hours until death. We have been able personally to verify this by perforating a dog's duodenum with quite uniform results. The explanation for the absence of fat necrosis in this case may lie in the fact that the pancreatic duct had become occluded by adhesions.

Attention is strongly called to the fact that there was no tearing or cutting through of the sutures used, which were a No. 0 silk threaded on a No. 9 cambric needle; nor was there any apparent seepage, but a firm union. The secondary leakage had come through an extension of the perforative process; also the healing of the gastro-jejunostomy was with a minimum of reaction.

One of us (Dr. Courtenay⁵) has previously shown the decided advantage of this fine suture material and the findings here bear out previous investigations.

The fistula, then, apparently formed as a result of auto-digestion of the bowel wall. Berg⁶ has ardently advised a pyloric occlusion in these cases as a safeguard against fistula, but from a study of this case it would seem that the question is not one of adequate mechanical closure, but rather of a progressive pathologic-chemical tissue destruction, as here the immediate repair of the injury itself afforded an almost total occlusion and, further, the secondary perforation occurred distally as well as proximally to the original lesion.

In a recent contribution Deaver⁷ has forcibly emphasized the value of early surgical intervention in these cases and the extremely bad results in cases of more than 24 hours standing. This con-

dition is in the highest sense a surgical emergency and the time to operate is early. There is perhaps no other site in the abdominal cavity at which the destructive processes are more viciously active, and a delay of hours is so productive of direful consequences as to change what often affords most gratifying results into a battle against almost insurmountable odds.

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THE VALUE OF HIGH FREQUENCY CURRENT IN TREATING CALCULI IN A DIVERTICULUM.*

By MARTIN MOLONY, M. D., San Francisco.

There are two questions involved in this case which I will later on give you particulars of, large calculi in a diverticulum of the urinary bladder.

First—What is a diverticulum?

Second—What is the value of high frequency current on vesical calculi?

Confusion has arisen as to what is a diverticulum and what is a sacculi. They have a pathological resemblance, although etiologically distinct.

Diverticula: (1) They are of congenital origin. (2) All coats of the hollow viscera enter into their formation. (3) They are seldom multiple and are found at any age. (4) They usually attain a large size. The appendix is a representative of the type in a normal subject. Meckel's diverticulum is the most common abnormal diverticulum. Traction diverticula are another class, due to the mechanical drag of a small adhesion.

Saculi differ from diverticula: (1) They are never of congenital origin. (2) They are mostly hernias of the mucous membrane through the muscular coat. (3) They are thin-walled and associated with obstruction of the outlet. (4) They are multiple and are usually limited to advanced life. They are not found in youth. They are found throughout the gastro-intestinal tract, the urinary tract, the gall bladder, and the appendix, or in any of the hollow viscera. All of them may harbor concretions, are liable to attacks of inflammation, and may be of the greatest surgical importance.

Case history: Male, age 56 years. The trouble began twenty years ago with pain, frequency, and straining on passing urine. He was advised to use a catheter, although he passed urine freely. Sometimes he had acute attacks with severe spasms of the bladder. In recent years these spasms became excruciating. The frequency was often every half hour by day, and five or six times by night. He had no control over his urine and wore a rubber urinal always.

Examination, Sept. 25, 1913: Very thin and feeble, with some bed-sores on his back. On palpation felt a lump like a ball close to umbilicus, which one could almost grasp with the fingers at times. He was taking large doses of drugs to relieve the spasms. No enlargement of the prostate, no residual urine, no stricture.

* Read before the San Francisco County Medical Society, February 17, 1914.

Urinary analysis: Alkaline; specific gravity 10.10; albumin, pus, and bacteria.

Cystoscopy: Very severe cystitis with large pieces of fungoid-looking masses of mucus. Diverticulum in the posterior wall of the bladder, nearer the summit than the base, containing a calculus which was visible through the mouth of the diverticulum.

On consultation with Dr. Williamson, an operation was considered out of the question, owing to the patient's delicate health and the severe infection of the bladder. It was decided to try the effect of high frequency current on the calculus. The insulated cable was placed on the visible portion of the stone, and strong current applied which was later increased. The calculus seemed to change in color and shape, became more corrugated, and small pearl-like beads appeared upon the surface. Several vigorous applications were made every four days for three weeks. Towards the end of these treatments, thick chunks of mucus came out of the diverticulum, and the calculus could be easily moved about by pushing it with the end of the insulated wire.

After the last application of the current, the stone was seen to be protruding from the diverticulum. It was decided to try the lithotrite, and with some difficulty and maneuvering, the stone was grasped and brought to the base of the bladder, where it was easily crushed and aspirated.

On cystoscopy a few days later, another stone was seen in the mouth of the diverticulum, and was similarly treated. Still, later, a third and largest of all was disposed of in the same way. This was all done in the office. Gas was given on the last occasion, and only while using the aspirator, so as to allow the full suction power in evacuating the debris as rapidly as possible.

On the first occasion the lithotrite was clogged with a mass of debris and jelly-like mucus. It took a little time to free it of this and close it accurately before removal. There was only a little blood on the first occasion when the lip of the diverticulum was caught in the lithotrite. Every particle of the calculi was completely removed.

On examination with the cystoscope, which can be passed into the diverticulum, the interior is seen to be markedly trabeculated. The inter-spaces are deeply pouched and saucer-shaped. The orifice of the diverticulum is very clearly seen, standing out like a flap or dividing wall in the bladder, about one-quarter inch to one inch or more in some places; some parts quite thin, others quite thick and smooth.

Outside of the diverticulum the bladder mucous membrane is quite pale and smooth, and has no trabecula. The cystitis has quite disappeared and the ureter mouths are clearly seen. The blood vessels are more numerous than normal and larger. Urine is now quite clear and acid and is free of albumin. The spasms have completely disappeared. He has thrown away his urinal and passes urine four or five times a day normally. His weight has increased and he can walk five miles comfortably.

The calculi consisted of triple phosphates and oxalates in lesser proportion. Weight, 580 grains.

What action had high frequency treatment in this case when calculi were held in a cavity for twenty years? Whether it was due to electrolytic action on the stone causing diminution in its size, or whether it caused dilation of the orifice of the diverticulum, or contraction of the walls with expulsion of the thick jelly-like mucous packing—all seemed to aid in bringing the calculi within range of the lithotrite and obtaining the practical results demonstrated in the case.

Under ordinary conditions of calculi in the bladder, there is no need for high frequency current or

rarely any other method, as nothing excels the lithotrite.

With the aid of the cystoscope in confirming your diagnosis, the operation of lithopaxy is so rapid, so simple, so efficient, and with so little risk or inconvenience to the patient, that nothing supersedes it.

On looking over the literature of diverticula, Young, in Johns Hopkins Hospital Reports, 1906, goes extensively into a number of cases. He calls everything diverticula. He includes in the majority of his cases, obstruction due to prostatic hypertrophy and strictures. In nearly all there was trabeculation of the bladder, and where he could examine the interior of the cavity he found the mucous membrane smooth and the walls very thin.

In this case there was no obstruction. One marked difference which is not noticed in any of his cases. The interior of the cavity is very markedly trabeculated with large, well-defined bundles and saucer-shaped pouches. Outside the orifice the bladder mucous membrane is quite smooth and normal.

Discussion.

Dr. Victor G. Vecki: I think that the high frequency current had in this—as in every other case of calculus—only the value of losing time. If the moving of the calculus from the pouch of the diverticulum were attempted with the lithotrite or any other instrument right away, I think this patient would have improved a little sooner.

Dr. Henry Meyer: I came to the conclusion long ago that the action of high frequency current on stones is nothing. What the high frequency current could have done in this case it is difficult to know. It is my impression that the manipulation Dr. Molony used is what caused the calculi to come out of the diverticulum, rather than the high frequency current. I do not think it could have dilated the diverticulum or contracted the calculi.

I had an elderly man some time ago who had a calculus lying loose in the bladder. I advised him to allow me to crush it. He was an old man, very sensitive. He was put under an anesthetic; no calculus could be grasped with the lithotrite; it could not be felt. After trying for about three-quarters of an hour, the family gave their consent to my opening the bladder, which I did. It was lying in a diverticulum, and could not get out even by changing the position of the patient. The calculus can be lying loose in the bladder and suddenly get into a diverticulum and be held there by the muscular substance of the bladder. On another occasion, possibly, it may have come out itself. I am firmly convinced that high frequency could not, in Dr. Molony's case, have contracted the calculi or enlarged the opening of the diverticulum.

Dr. S. O. Beasley: I saw a case with Dr. Rigdon—a cystoscopic case—in which the X-ray picture showed a large calculus the size of a two-bit piece, apparently in the bladder. It could not be seen with the cystoscope at all, although a good picture of the bladder was obtained.

A suprapubic incision was made and one could feel this calculus perfectly plainly as large as a small walnut immediately underneath the anterior wall of the bladder under the abdominal incision, although the bladder was well distended with boric acid solution. A few months later, before incising the bladder wall, the stone could not be felt at all. The bladder wall was then incised and a normal bladder wall was found and nothing resembling a diverticulum was seen and the stone was loose on the floor of the bladder. Unquestionably, in my opinion, the stone had been held in position on

the anterior wall of the bladder by the muscular wall of a certain area contracting about it and completely enveloping it, improbable as this may seem. Is it not quite possible that this may have been the case in Dr. Molony's patient?

Dr. Molony, closing discussion: There is no misconception about this. It is a true diverticulum in contradistinction to a sacculus of the bladder. It was in the posterior wall near the summit and had a distinct orifice, different from the orifice of a sacculi.

After the mucus cleared up you could push the visible calculus about with the end of the insulated cable, and you could see only a portion of it at a time.

At present I am not giving any explanation of how the high frequency current acted. I can only state that it aided, in some manner, in causing the calculi to protrude in the orifice where it was possible to grasp them consecutively.

It is a rare case. Dr. Brasch of Rochester told me that he had never seen a similar one among some thousand bladder cases.

On examination with the cystoscope, you could look over the flap surrounding the orifice and see the diverticulum extending in the distance. The shape was oblong and these large calculi were evidently placed one behind the other, as only one was visible through the cystoscope.

I did not take any measurements.

CASE OF ACUTE APPENDICITIS (WITH EARLY OPERATION).*

I desire to make a brief clinical report of the case of William T. Barry, Jr., believing that it will furnish a useful lesson, as illustrative of the importance of a careful and correct diagnosis, and early operation in cases of acute appendicitis.

William T. Barry, Jr., a Stanford student, aged 22, healthy, of good physique, weight 145, active expert in all gymnasium work. Without any premonition or warning, on Sunday, May 17th, while in attendance upon a baccalaureate sermon, he was suddenly seized with acute and agonizing abdominal pains, went at once to his room and telephoned for a surgeon, Dr. Thomas Williams of Palo Alto, who made a brief examination, diagnosed a possible appendicitis, but with some obscurity of symptoms, the pain being referred to the left side of the body. The doctor placed the patient in his automobile and took him at once to his office where his laboratory assistant made a blood count, finding 24,000 leukocytes per C. M. He was then taken to the Peninsula Hospital, placed in bed and put under careful observation with an ice bag to the abdomen, and a molasses enema ordered. This was 3 p. m. and the chart showed T. 100°, P. 76, R. 24. The patient vomited and complained of great pain referred to left side and all over abdomen. At 5:30 p. m. Dr. Williams called Dr. Ray L. Wilbur, Dean of Stanford Medical School to consult on the case. Dr. Wilbur found a ballooning rectum, and located a tender area through rectal wall in the pelvis, which he was convinced was appendicular. Dr. Wilbur concurred with Dr. Williams in his diagnosis of acute appendicitis, and that the case called for immediate operation, as evidently a pus sack had formed and delay would be dangerous. To this the patient consented. A small amount of morphine was then administered as the abdominal pain was excruciating. I was notified by long distance telephone at Santa Barbara, but did not receive the message until 15 minutes before my son went on the operating table at 9 p. m., being returned to room at 9:50 p. m.

The operating surgeon, Dr. Thomas Williams, found a long highly inflamed thickened appendix lying low in the pelvic cavity, (and its dragging effect on the mesentery probably accounted for the left side and diffused pain). It was readily reached

and removed (ligated and stump invaginated) and upon examination fully one-fourth of its lumen was found occluded by the presence of an enterolith; it carried a pus sack. The abdominal wound was closed layer by layer, the patient returned to bed and six ounces saline ordered per rectum every two hours, until he voided freely. Recovery was uninterrupted, temperature never reaching 100° with an average pulse of 84. He was able to leave Peninsula Hospital at Palo Alto and return to his home at Santa Barbara in fourteen days. His health to-day is splendid. How different might have been this report had an error been made in diagnosis or delay in operating I need not dwell upon; most dire would have been the consequences indeed. The pus sack would unquestionably have ruptured in twelve hours. My son certainly owes his life and health to the operating surgeon, Dr. Thomas Williams, nor can I omit to give due credit to the well conducted Peninsula Hospital with its superintendent, Mrs. Barry, and her able and efficient corps of nurses.

So then the lesson of the case is to diagnose all abdominal pains with conscientious care, operate early and you will save the life, and gain the lasting gratitude of the patient and his family.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

The following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association and are included in New and Non-Official Remedies, 1914. The reports appear in the December 1913 issues of the Journal A. M. A.

Digipoten.—Digipoten consists of the digitalis glucosides in soluble form, diluted with milk sugar to give the preparation an activity approximately equal to that of digitalis of good quality. Digipoten is standardized by the "one-hour frog" and the guinea-pig methods, and it is adjusted to an activity of approximately 1400 heart tonic units (of Houghton). It contains from 0.3 to 0.4 per cent. of digitoxin as determined by a modified Fromme method.

Actions and Uses.—Digipoten has the same activity as digitalis leaf of good quality and may be used like the official drug with respect to indications and dosage.

Manufactured by the Abbott Alkaloidal Company, Chicago, Ill. No U. S. patent or trademark.

Digipoten Tablets.—Each tablet contains digipoten 0.03 Gm. (½ grain).

Tannigen Tablets.—This dosage form of an accepted proprietary article has been accepted.

Each tablet contains tannigen 0.5 Gm. (8 grains). (Jour. A. M. A., Dec. 6, 1913.)

Bacillus of Bordet-Gengou Vaccine.—This vaccine is believed to be of service in the prevention and also in the treatment of whooping-cough.

Greeley Laboratories, Inc., New York City.

Bordet-Gengou Bacillus Vaccine for Whooping-Cough Prophylaxis.—This vaccine is marketed in three doses, containing respectively 200, 400 and 800 million killed Bordet-Gengou bacilli; put up in a special hypodermic unit container.

Bordet-Gengou Bacillus Vaccine for Whooping-Cough Therapy.—This vaccine is marketed in six doses containing from 100 to 800 million killed Bordet-Gengou bacilli; put up in a special hypodermic unit container.

Culture of Bacillus Bulgaricus, Fairchild.—The Fairchild culture of bacillus bulgaricus is a pure culture in vials of the bacillus bulgaricus, each vial containing about 7 Cc.

Actions and Uses.—The Fairchild culture of bacillus bulgaricus is designed for internal administration in the treatment of intestinal fermentative diseases with the design of accomplishing the acclimation of the bacilli, so as to secure their characteristic action against putrefactive fermentation. It is employed in body cavities by direct application to the affected area in putrefactive and suppurative conditions. The culture may be employed for all conditions for which the bacillus bulgaricus is desired, for both internal and external use.

Dosage.—The content of one vial is the usual daily dosage. The Fairchild culture of bacillus bulgaricus is supplied in boxes of six vials and in boxes of thirty vials. The vials must be kept in a cold place and are not guaranteed beyond the date stamped on the package.

Manufactured by Fairchild Bros. and Foster, New York City. No U. S. patent or trademark.

The bacilli are obtained by inoculation and incubation upon Cohendy peptone-sugar-broth medium. (Jour. A. M. A., Dec. 13, 1913.)

Antimeningococcus Serum.—(See N. N. R., 1913, p. 215.) Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago.)

Slee's Antimeningitis Serum.—Marketed in vials containing 20 Cc.

Antistreptococcus Serum.—(See N. N. R., 1913, p. 216.) Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago.)

Slee's Antistreptococci Serum.—Marketed in vials containing 10 and 20 Cc. (Jour. A. M. A., Dec. 20, 1913.)

* Reported by William T. Barry, M. D., to Santa Barbara Medical Society, June 8, 1914.

BOOK REVIEWS

Radium and Radiotherapy. Radium, Thorium and other Radio-Active Elements in Medicine and Surgery. By William S. Newcomet, M. D., Professor of Roentgenology and Radiology, Temple University, Medical Department; Physician to the American Oncologic Hospital; Fellow of the College of Physicians, Philadelphia. 12mo, 315 pages, with 71 illustrations and 1 plate. Cloth, \$2.25, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

The application of radium and other radioactive substances in therapy is of recent date. Owing to the rarity and to the great cost of the active material only a small number of observers have been able to study and experiment with these agencies.

Aside from the unfortunate newspaper notoriety that was given radium (and some physicians) last year, the knowledge of physicians of radiotherapy (and Roentgentherapy) appears to be small. Yet this chapter of medicine is of great and growing interest.

The book of Newcomet is a mine of instruction for all those who wish to inform themselves upon radium and the other radioactive substances. The book is written clearly, concisely and comprehensively. The different radioactive elements are enumerated and described; their physical, etc., properties, disintegration, average period of life, methods of estimation and of employment are explained.

The concluding chapters are devoted to the application in practice: in dermatology; in ophthalmology; in diseases of the ear, nose and mouth; in diseases of the genito-urinary system; in gynecology; in epitheliomata and carcinomata; in sarcomata; in benign tumors; in internal medicine; in rheumatism and gout.

There is no undue enthusiasm manifested in this book; reports and recommendations are based strictly on observed facts.

H. J. K.

Psychanalysis, Its Theories and Practical Application. By A. A. Brill, Ph. B., M. D. W. B. Saunders Company, 1912.

In attempting the difficult task of discussing the contents of a book on psychoanalysis, the reviewer was led by the desire to stimulate the interest in psychoanalysis among his confrères in California and to encourage them to inform themselves on a therapeutic procedure which seems to be superior to other forms of psychotherapy, when applied properly in certain cases. This wish may serve as an apology for a somewhat lengthy review.

Whether one adopts the teachings of Freud as they stand today, or refuses to accept them, or whether one takes a more conservative and expectant view and believes that the basic principles of his psychology will ultimately stand criticism; one who makes the pretension of keeping abreast with progress, cannot afford to disregard the study of psychoanalysis.

Not only the nerve specialist, not only the general practitioner, but the educated man in general must take cognizance of psychoanalysis, because the Freudian psychology is destined, not only to revolutionize the understanding and treatment of the psychoneuroses and psychoses, but also to play a large role in the interpretation of mythology, in the understanding and analysis of art and science, in fact in the development of every branch of culture.

The generalization of the application of psychoanalysis has already, three years ago, necessitated the publication of a non medical magazine (*Imago, Zeitschrift fuer Anwendung der Psychanalyse auf die Geisteswissenschaften*) which, as the title explains, is devoted to the relation of psychoanalysis to spheres of human knowledge, non medical.

Anyone who has followed the literature on psychoanalysis will admit the intricacy of the problems

involved. The understanding of the subject is more difficult on account of the fact that there was, up to this publication of Brill, no comprehensive compilation of the data giving a clear conception of the comparatively new discipline in English. For this reason Brill's book is most opportune. Freud's "Neurosen-lehre" by Hitschmann has been translated into English under the title of Freud's "Theory of the Neuroses" by C. R. Payne, since Brill's book came out.

Brill's work gives a concise and precise idea of Freud's principles, illustrated with cases from the author's own experience. Brill is well qualified to write on psychoanalysis. He is one of the foremost exponents of the Freudian doctrine in the United States and he has occupied himself for years, not only with the theoretical study of psychoanalysis, but was able through his private practice and a large clinical material to verify the correctness of the Freudian principles. It is only through hard work and long experience that one can acquire a thorough knowledge of Freud's psychology. The mere perusal of Brill's book is not sufficient, particularly not for one unacquainted with psychoanalysis. It requires concentration and study by an unbiased mind, as one is confronted by, at first seemingly startling statements, as e. g. the sexual etiology of the actual and psychoneuroses.

A part of the contents of the book consists of Brill's papers published in the *Journal of Abnormal Psychology*, *American Journal of Insanity*, the *New York Medical Journal*, the *Medical Record* and the *New York State Journal of Medicine*.

The work is divided into twelve chapters. Brill has added to each of these a bibliography referring to its contents; a very practical innovation. A good general index ends the volume.

In the first chapter on psychoneuroses, Brill discusses the development of Freud's conception of the psychoneuroses and psychoses, their relation to the psychology of dreams, sex and the psychopathology of every-day life.

The cathartic method of treatment, originally used by Breuer and Freud under hypnosis, was discarded for the psychoanalytic method, through which a psychic force in the patient, which opposes the pathogenic idea from becoming conscious, is overcome. This force is called repression.

The repression (or the forgetting) of the pathogenic idea which has to be overcome, is never complete and the complex continues to strive to come to the surface, but is inhibited by the psychic censor. This struggle ends in a compromise and its result is a psychoneurotic symptom. The ego frees itself of the painful idea or unattainable wish, but a psychoneurotic symptom, into which the complex has been converted, has taken its place, and while the individual is spared a great deal of mental pain, this complex remains in the unconscious ready to become active. When this occurs it brings to the surface a distorted formation instead, and this becomes connected with the same pain, which the patient previously succeeded in repressing.

The classical symptoms of hysteria, such as paralyses, contractures, aphorias, convulsions, etc., are physical symptoms into which the painful ideas or incompatible wishes have been converted.

There are, however, persons in whom there is no adaptation for conversion and in these cases the effect of an unbearable idea becomes detached from this idea, and instead of being converted into the physical, remains in the psychic sphere. The unbearable thought does not attach itself to a conscious association and the detached affect allies itself to another indifferent idea and becomes an obsession and is so changed that the patient does not recognize it. He realizes its absurdity but he cannot rid himself from it. While the unbearable idea is suppressed, the affect remains unchanged and undiminished and the advantage thus gained

by the ego is not as great as in the hysterical conversion.

The same mechanism holds true for the origin of phobias and doubts. The psychoneuroses in which the obsessions, doubts and phobias play the dominant rôle, come under the heading of compulsion neuroses. This mechanism is, as just seen, entirely different from the mechanism of hysteria.

According to Freud, the unbearable ideas underlying the compulsion neuroses as well as of hysteria have their origin in sexual experiences of childhood. A conflict between the libido and the sexual repression takes place. It is the mental conflict which is the essential causative factor and not the sexual moment as such.

The second chapter discusses dreams, their structure and mechanism, the technic of interpretation, their symbolism; the relation of dreams to the neuroses and psychoses is ventilated.

In order to understand the mechanism of dreams, the mechanism of repression has to be borne in mind. When we meet with mishaps or failures to which we cannot adequately react, we grieve over them and make efforts to forget, i. e., we repress them. This repressed material (complexes) is pushed into the unconscious. This is, however, as mentioned before, not always successful. The complexes strive for manifestation and the resultant psychic conflict may produce a neurosis or a psychosis. The mechanism of repression exists in both, the normal individual and in those predisposed to neuroses. In the former the complexes usually remain inert, manifesting themselves only now and then in psychopathological actions and dreams, while in the latter they form, in addition, the symptoms of the neurosis or psychosis.

But no matter in what form the complex tries to come to the surface, in dreams, psychoneurotic symptoms, or in hallucinations and delusions of the insane, it is always distorted and not recognized by the individual. This distortion is caused by the fear of the psychic censor. This censor is a protective mechanism for the good of the organism. It is an inhibiting force formed by our religious and ethical training.

The formation of dreams is the result of two psychic forces or systems, one of which forms the wish of the dream, while the other exerts its censorship on this wish and thus produces the distortion. The latent thoughts of the dream are not known until the dream has been analysed. What we remember on awakening are the manifest contents of the dream emanating from the latent ones. The admission to consciousness is a prerogative of the censor which allows nothing to pass but that is agreeable to it. Whatever is rejected by the censor is in a state of repression. While the manifest contents of the dreams seem absurd, the latent content, when brought to the surface by analysis, always shows the fulfillment of a wish.

The desire for realization of wishes is innate to the human race. In studying children we see how insatiable they are in their desires. The inhibiting process begins in childhood and is continued through life when ethics and religion teach us to curb our desires.

The transformation of the latent into the manifest content of the dream is effected by the so-called dreamwork. In the process of transformation, a condensation takes place. While the manifest dream is very short, the analysis containing the thoughts underlying the dream fills many pages.

Another effect of the dreamwork is the process of displacement. The elements which seem most conspicuous in the content of the dream do not necessarily have corresponding importance. An insignificant element may represent the main thought and vice versa. Two other factors of importance in the transformation of the latent into the manifest content are the manner of representation and the so-called secondary elaboration.

Furthermore the significance of symbolism in general and particularly in dreams, is discussed in this chapter.

In Chapter III Brill takes up the actual neuroses, i. e., neurasthenia and anxiety neurosis. He refers to their symptoms, mechanism, etiology and relation to the psychoneuroses, i. e., hysteria and compulsion neurosis (doubts, obsessions and probias).

In the determination of actual as well as psychoneuroses, the sexual life plays an important part. While the psychoneuroses are of a psychogenetic origin, the actual neuroses are due to somatic sexual injuries; of course, no definite lines can be drawn. Besides the somatic sexual injuries, the anxiety neuroses show also a psychic mechanism, similar to the one in hysteria but instead of conversion into physical symptoms, the psychic excitement is converted into anxiety.

In the following Chapter IV, the compulsion neuroses (obsessions, doubts, probias), commonly called psychasthenias, are discussed. These mechanisms are perhaps the most difficult problems in psychoanalysis and require a close application and study. This chapter is not adapted for a short excerpt.

Chapter V deals with psychoanalysis and the psychoses. Jung's association experiments and the mechanisms of delusions and hallucinations are described.

Psychoses are the result of long existing conflicts. These conflicts produce a splitting of consciousness (Janet's *abaissement du niveau mental*) and allow the repressed complexes—the emotionally accentuated elements—to rid themselves of the domination of the ego complex. These complexes manifest themselves in the different automatisms of the psychoses. These automatisms are the result of a compromise of the conflicts.

To those who make use of the psychoanalytic method, the senseless actions and utterances of the insane cease to appear absurd. The cases of dementia precox which are amenable to analysis, e. g., never show any dementia and it is for this reason that Bleuler calls this psychopathological condition Schizophrenia and Freud Paraphrenia.

Chapter VI deals with the difficult psychological mechanisms of paranoia.

According to Freud, paranoia is a reaction to a defense against a homosexual wish-phantasy, resulting in delusion of persecution. This seemingly paradox view can only be appreciated by the study of Freud's "Three Contributions to the Sexual Theory," in which book the course of sexual evolution from the polymorph perverse stage of sexuality through the different stations of autoerotism, narcissism to the final selection of the heterosexual object is described.

In the normal course of development, where the heterosexual object selection has been attained, the homosexual libido is not necessarily entirely eliminated but only pushed away from the sexual aim and directed to new uses. This is the so-called process of sublimation.

A fixation at any of the stages of the sexual development may take place, i. e., the sexual impulse, not developing normally, remains in an infantile stage and a morbid disposition is found.

But even when a normal heterosexual condition has been reached a retrogression of the sublimation, which was acquired during the development, can be brought about by manifold causes. However, a withdrawal of libido is not an exclusive occurrence in paranoia, nor is the withdrawal necessarily followed by disastrous consequences. The withdrawn libido seeks a substitute and until one is found the libido floats freely in the psyche and causes tensions which influence our moods. In hysteria the freed sum of libido becomes transformed into bodily innervation or fear. In paranoia the freed libido returns from the sublimated homosexuality to narcissism, while in schizophrenia,

in which there is also, like in paranoia, a removal of the libido and a regression, this regression goes further back and returns to the infantile auto-eroticism.

In Chapter VII on Psychopathology of Everyday Life, Freud's conception of consciousness, of the unconscious and the foreconscious is given.

Unconscious are all those psychic manifestations of which the individual is unconscious, they can only be brought to the surface by analysis. The unconscious consists of the sum total of those psychic processes which have been relegated to the depths of the unconscious from the very beginning of childhood. All primitive impulses which have been inhibited during the development of the individual are in a state of repression. They form points of crystallization for the later repressions (erotic material) which are, however, not subjected to the same amount of repression and some of them may remain in the foreconscious. The foreconscious stands between the unconscious and the conscious. The unconscious is incapable of consciousness without analysis, while the foreconscious can reach consciousness, if passed by the censor (cf. chapter on dreams). The resistances which hold the complexes back, are always active but slacken during sleep. The repressed material comes to the surface in the form of dreams but distorted and unrecognizable. They strive for recognition in psychopathological, and also in our normal waking states, in psychopathological actions of every-day life, e. g., lapses of memory, lapsus linguae, lapsus, calami. In all of these cases we must naturally exclude those suffering from any nervous or mental affection producing qualitative or quantitative memory disturbances. There is nothing arbitrary nor accidental in our actions. Analysis always shows that our actions are fully determined by unconscious motives. Psychopathological actions are complex indicators. Repressed thoughts strive to come to the surface and just as the insane realize their ideals in their insanity, we realize our wishes through our dreams and in the "little ways" of every day life.

Chapter VIII deals with hysterical fancies and dreamy states. They are found in both normal and neurotic individuals. These fancies or day dreams serve like dreams to relieve the mind and to secure comfort not to be obtained in reality. They represent wishes. They may remain conscious or merge into the unconscious. In the latter case they may become pathogenic. Analysis shows that the unconscious fancies are connected with the sexual life.

Chapter IX, The Oedipus Complex, its latent influence on normal persons and its negative manifestations in the psychoneuroses and psychoses.

The unconscious parental influence is found in every person. The first woman loved is one's own mother. The mother's image remains as a permanent standard for the female ideal. Normally a repression takes place and the boy gradually projects his love to strangers, but the unconscious first love acts as a constant guide in the future selection of a woman. What is here said of the boy is *pari passu* true of the girl.

This parental influence is usually harmless, but sometimes it acts perniciously, particularly in favorite children overburdened with love. They are not allowed to follow the different stages of the psychosexual evolution and their libido remains fixed on the mother. The result may be psychosexual impotence on account of an unconscious incestuous fixation on the mother which acts as an inhibition to sexual relations with other women. The same conditions are to be applied *caeteris paribus* in girls.

This complex has been spoken of in the male as the oedipus complex, in the female as the electra complex. These terms refer to the sexually emotional relationship between the son and the

mother, or the daughter and the father. It is an incest problem.

The neurotic individual represents regularly, a fragment of psychic infantilism. He is either unable to free himself from the infantile relations of psychosexuality, or he returns to them. A regression takes place. The incestuous fixations of the libido continue to play a great part in his unconscious psychic life.

Chapter X deals with the problem of the only or favorite child in adult life.

Brill has made this a special study. It is an excellent essay.

His conclusions based upon the investigation of a large material are as follows. The only child becomes, usually, a poor competitor in the struggle for existence, he lacks independence, self-confidence and the practical skill which the average boy acquires through competition with other boys. The only child is generally precocious, usually spoiled, often vain and one-sided and develops an exaggerated opinion of himself, becomes conceited, jealous and envious. A predominant feature among the morbid manifestations is the abnormal sexual life, and bearing in mind the evolution of sex from a psychoanalytic viewpoint, this is not at all surprising.

An only child need not necessarily become a neurotic; the danger can be avoided by proper training. Brill shows an interesting analogy between the only and favorite child and the Jewish race. The Jews (the only and favorite child of Jehovah) have displayed all the attributes of the only or favorite child.

In a footnote, Brill discusses the views of Freud in regard to the reasons of the hostility between the proverbial mother-in-law and her son-in-law.

Chapters XI and XII are not well adapted for a short review. In the former analeroticism is discussed and for its understanding a knowledge of Freud's "Three Contributions to the Sexual Theory," is a *sine qua non*.

The last chapter is on Freud's theory of wit. Its relation to the dream and unconscious is analyzed, the technique of wit and its tendencies are investigated; the pleasure, mechanism and psychogenesis of wit are studied and the motives of wit and wit as a social process examined. Finally the difference between wit and the comic is explained.

This brings us to the end of the book. If the perusal of these lines will encourage a few colleagues to read Brill's excellent work and interest them in the literature on psycho-analysis the purpose of this review is accomplished.

C. RENZ.

NEW MEMBERS.

Bock, Charles, Los Angeles.
Blanchar, Wm. Otis, Los Angeles.
Thorner, Moses, Los Angeles.
Nolan, Thos. Jas., Selma, Cal.
Small, Anna M., Oakland.
Collings, Dr. H. A., Winters, Cal.
Johnson, T. T., San Francisco.
Flanagan, L. J., San Francisco.
Butler, Edmund, San Francisco.
Barnes, Otto, Huntington Park, Cal.
Cecil, Arthur Bond, Los Angeles.
Cleaver, Jas. Harvey, Los Angeles.
Cline, John Welby, Los Angeles.
Lancaster, Jesse Samuel, Los Angeles.
Nevius... Jno. W., Los Angeles.
Waddell, W. E., Los Angeles.

DEATHS.

Freeman, Richard Thomas (died at sea).
Southworth, Albert, Los Angeles.
Amos, Wm. McD., Lordsburg, Cal.
Cahen, E. M., Los Angeles.
McCrea, Agnes Benford, died in Los Angeles.

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Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

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EDITORIAL NOTES

REAL HELP.

A member who contemplated the purchase of an X-ray outfit notified the JOURNAL office of his intention to make such a purchase and asked if it would be any help to us if he were assisted in this matter by some of our advertisers. It certainly was. It is just this sort of personal interest and co-operation that will make your JOURNAL a larger and a better publication. If all of our members would follow this example and purchase what they want through our advertisers, or at least take an interest in them and get them to see that advertising means real friendly relations, it would help the JOURNAL tremendously. All of our advertisers are reliable and their products are good; why not help yourself by establishing relations with them? In the first month after running the advertisement of the Uncle Sam Breakfast Food, which is a genuine article of merit, packed and advertised in ways that have been carefully scrutinized and approved by the Council on Pharmacy and Chemistry of the A. M. A., only eight requests for sample packages were received. This is certainly not the hearty co-operation which a concern is entitled to if it goes to the trouble and expense of changing its packages, labels and literature to conform to professional standards. Will you not fill in the coupon you will find attached to their ad and send it in? Take a little interest in the people who are taking enough interest in you to spend their money with you and so help your JOURNAL to be what it is and to grow. Incidentally, but of course you are not interested in this, *in many instances you will actually save money by trading with your own advertisers!*

"TO OUR ADVANTAGE."

Because all movement, all change, is oscillatory, we have the old saying that history repeats itself. And it surely does, for similar conditions will produce similar results until human nature changes a whole lot. So it is now. Toward the end of the war of the Revolution, the Jesuit missionaries in Mexico published a little pamphlet, now exceedingly rare (the only copy I ever saw or heard of was destroyed with all the rest of my library of Americana in 1905), with the title, freely translated, "The Present War and How It May Result to Our Advantage." To-day, considerably more than a century later, we find the public press of this country filled with articles on the subject of how the present European tragedy will result to our advantage. And it certainly will if we but keep our heads cool and do not become excited or hysterical. We are exceedingly fortunate in many ways. At the head of our government is a calm, thoughtful man whose judgment has been proven to be good, for whatever one's politics, he must admit that "watchful waiting," though perchance irksome to some, was masterly in its result: just now we would not look at all dignified if we were at war with Mexico! A man who, for many years, was a schoolteacher in its biggest sense and who knows the hysteria that comes over boys gathered together in bunches—and who also knows that men are only slightly older boys, subject to more or less the same influences. Again we are fortunate in that all the rest of the world wants this country to remain quiet and at peace; people who are too busy to produce, must be fed in some way, and we must be in a condition to produce food for them; and other things as well. Wisely, too, the moratorium (period during which financial liquidation is suspended) was declared and kept up; wisely the exchanges were closed, so that panic and slaughter of securities could not occur. To be sure, vast stores of our products are on our hands at the present time, their usual markets blocked, their usual channels of movement closed. But that will be but for a time; eventually they must be moved; the raw material, needed by the world, must be bought and moved and consumed—and paid for. Patience is what each one of us must cultivate; patience and calm and absolute neutrality.

It is not possible to blind one's self to the fact that nearly everyone is angry at Germany and blames the cause of the war upon that country. But let us try and avoid argument on the subject, for all argument amongst us who live in this land of peace, is and must be profitless and productive of nothing but hurt feelings. This is a war of surprises on every side and of wise moves and acts unprecedented. The German "Plan No. 2" for invading France failed because of two surprises: the almost unbelievable bravery of Belgium and the immediate introduction of England into the war game. To the thoughtful man it is clear that the war will last longer than many suppose, and hence, there will be ample time for our American manufacturers to increase their plants and to turn out products which heretofore we have bought

from other countries. Notably this must be the case with many drugs and chemicals and with instruments and the like. Immediate legislation in England and at home in the shape of shipping and marine insurance laws, was also a surprise and one tending to restore calm and render less long the period of inactivity in the movement of our products. So many and so essential have been the surprises that no one but a fool would attempt to prophesy what may happen to-morrow or the next day. Of one or two things, however, we may be sure. If we remain calm and neutral and at peace within and without ourselves, eventually this country will profit enormously. To be sure, all of Europe will be "broke" when the war is over, but it will recuperate; credits will have to be lengthened and readjusted; but the end is profit. There is no reason to be uneasy because the price of some things goes up; that is bound to happen. Also, the stoppage of certain business is bound to throw many people out of employment; but they will find other lines of activity, in time. The shoe will pinch here and there for a while, but it is bound to stretch and get shaped to the suddenly deformed foot, and eventually will become a very comfortable shoe. Let us thank God that we live in a land of peace, that we have wise guidance and an abundantly productive land, and let us look confidently toward the future, thinking as little of the ghastliness of the present, in other lands, as we possibly can. The war will result "to our advantage."

GRUESOMELY HUMOROUS!

Hearst, the advocate of Peace, with a capital "P"!! One's stunned attention is diverted for a brief space from the unthinkable tragedy of Europe, by the vaudevillian floppings of the man who forced the newspaper war with Spain, had no words harsh enough for President Wilson because he would not make war on little Mexico, and now is for having the United States get very busy in the effort to secure universal Peace—with a capital "P"—and his best special writers pouring out columns of guff! A few brief weeks ago Hearst was hammering at Wilson for war; and now he is badgering Wilson for peace! Some things are funny, even in the midst of tragedy.

Eight nations of people suddenly decide to strive with might and main to put each other, in different groups, out of business in any way possible, and for that reason and purpose they have spent billions in accumulating death and murder dealing machines and methods. Everything is provided for the purpose of murder, by wholesale. To kill, in any way; from bombs in the air to mines under the earth and the sea; to kill is the thing desired. And then, forsooth, with all this preparation for killing in any way possible, one or the other of them complains that some other one is killing in not approved method!! Insanity run riot; all sense of proportion and relative values gone. You may kill in one way, and it is quite all right; if you kill with some other sort of bullet, it is quite unfair! Was there ever such an utter absurdity! To steal unblushingly from someone else, it is like

opening the gates of the animal houses at the zoo, in front of a large crowd, after telling the animals that they may bite the people but they must not hurt them!

RISING PRICES.

Complaint has reached the JOURNAL that certain firms are raising prices on commodities needed by physicians and their patients. In some instances this is true and in others it is not the case, though some increase, in a number of lines, must be expected. The American agents for the salvarsans have announced that they will not sell any of their stock to dealers but will sell direct to physicians, as long as the supply lasts, at the old retail price. Bischoff announces that they will not increase the price on their products as long as any stock remains, and Schering and Glatz have made the same announcement. Walters Surgical Co. have sent out a letter saying that they had made an immediate increase of 20% on certain lines of office and hospital fixtures. This would hardly seem fair, at the present time, as it would seem to be more appropriate when the price goes up on them. Lackenbach announces that he will continue to sell the salvarsans at the price of \$5.00 with the necessary apparatus for injection, but that none will be sold at the old price without the apparatus; as the importing agent has raised the price to the retailer and as Lackenbach's line of business is somewhat specialized, this seems to be not unreasonable. It is a bit difficult to say just when a rise in price is justified and proper and when it is not, but common sense and the matter of supply and demand will settle these things in the end.

COUNCIL MEETING.

A meeting of the Council of the State Society was held on September 12, at which meeting nine of the twelve Councilors and the President and Secretary were present. In view of the fact that the A. M. A. is to meet in San Francisco in June and that a considerable number of members had requested that the annual meeting of the State Society be dispensed with in April, 1915, because of the other and larger meeting in June, the Secretary was instructed to take a mail ballot of the House of Delegates to determine whether the meeting of the State Society should be omitted and things go along as they are until April, 1916.

Owing to the fact that considerable friction has developed on a number of occasions, when members sued for alleged malpractice held insurance policies in some company, between the attorneys for the company and the attorney for the Society, the following action was taken: The Secretary was instructed to notify any member who might be sued and who is insured in some company, that it will be necessary for him to choose which agency he will elect to defend his interests and the reasons for this; and further to notify him that the attorney for the Society will watch the conduct of the case and if necessary or desirable will advise with or co-operate with the attorney for the company. The object is not to avoid doing any of this work for our members, but to see that the work is done

in the best and most businesslike way; every member's interests will be watched and guarded without fail.

The question of the attitude of the State Society in the matter of proposed medical legislation was brought up and discussed, and a special meeting of the Council to consider this question was ordered called for Saturday, October 10, 1914, at 8 p. m., in the library of the San Francisco County Medical Society, at which meeting anyone interested in the subject is requested to appear and be heard.

The Secretary reported a steady growth in the business of the JOURNAL and the membership of the Society, which on that date amounted to 2456, the largest membership on record.

OUR REAL WORK.

Doubtless many of our members have an idea that publishing the JOURNAL once a month, collecting the accounts and keeping track of our membership is about all the work that the office of the State Society does. This is very, very far from the case and at the request of the President, a brief statement of some of the seldom-heard-of activities of the office are given. In the first place, our confidential records are almost invaluable; probably twenty-five thousand dollars would not suffice to secure the information on file. We have endeavored to find out something about every licensed physician and every quack in the state and no information is too big or too insignificant to be recorded. In many instances it has been only through our office that identity has been established, fraud uncovered or injustice corrected. That work in itself is very extensive and laborious and, of necessity, is of the most confidential nature; it is our aim to see that information shall be properly used and not made a weapon. Most of the employers of medical services fill vacancies through our office or come to it for information and we have furnished hundreds of physicians with locations, positions on salaries, and the like; this same sort of work applies too to nurses, office attendants, etc., and is very extensive; no charge is ever made for this work. The exchange, purchase and sale of locations is also a factor of considerable importance and we always have a number of such things on record in the office. The one object of the Secretary has been to make the office of the Medical Society of the State of California the one absolutely necessary clearing house or headquarters for all things medical; to make it the one place where accurate information in regard to medical affairs in California can be obtained, and to be of the greatest possible help to physicians in every conceivable way. For years it has been a rigid rule that no request for information shall be turned down; the address of the publisher of a medical journal, the title of a book; where to get a certain thing or where to find out certain information; no letter is ever unanswered and the desired information is secured or the enquirer told where he can get what he wants to know. As a matter of fact, the publication of the JOURNAL is one of the smallest pieces of work that goes on in the office of the Society.

A GOOD NUMBER.

What did you think of that Tuberculosis Number of the JOURNAL? A good many people thought it a pretty fine number and we thought so too. Several letters of commendation have been received about it and the State Board of Health took official recognition of it and of some of the editorial suggestions made in that issue. With the co-operation of our members and our advertisers, and their interests should be common, we expect to bring out a number of special issues, from time to time, and make them as notable as possible. You may have noticed, too, that the JOURNAL very frequently has eight or sixteen additional reading pages and that the number of illustrations is increasing as well as the quality of the articles published. There is room for lots of improvement, if you will help a little; an occasional two-cent stamp and five minutes of your time will not hurt either your purse or your work or your dignity—and it will help us a whole lot. Wilt?

PUBLIC HEALTH SERVICE EXAMINATIONS.

Examinations will be held in various parts of the country on October 19th for admission to the Public Health Service, and full information will be found on another page. Positions in the Service are desirable and permanent ones and this branch of the government medical activity should become increasingly attractive to young physicians as the Public Health Service grows in numbers and importance.

BUBONIC PLAGUE IN NEW ORLEANS.

As most of us know, what had been looked for for a long time happened in July and bubonic plague made its appearance in New Orleans in that month. Immediately the Public Health Service was requested to take charge of the situation and the old friends of San Francisco, Dr. Rupert Blue, now Surgeon-General of the Service, and his assistant, Dr. W. C. Rucker, went to work in New Orleans with the same energy and with the knowledge gained from their work with plague in San Francisco. Up to the end of August, there had been noted 23 cases of human plague and 82 cases of rat plague; others have occurred since that date. We may, however, have no anxiety as to the outcome as the Public Health Service has the situation well in hand and the destruction of rats is enormous.

NEW DODGE IN FAKERY.

Some of our wily friends (?) the advertising fakers have hit upon a new and clever dodge for fooling the unwary person with a few dollars who comes into their clutches. They get the price lists of some respectable drug houses and have sheets printed in the same general style as the sheets of the price list, which they insert in the book. These fake sheets give the enormous prices of their fake stuff, as for instance "cat serum," "lost manhood animal extracts," and the like. The Board of Medical Examiners is after them energetically.

AMERICAN MEDICAL MEETING.

Whatever you do, don't forget two things: The Exposition is to open its doors officially on the date originally designated and it is going to be a tremendous success; bigger than we could have expected. And also, the American Medical Association is going to meet in San Francisco in the third week of June 1915—June 22nd is the beginning of the week. Remember it and make your plans early so that you may attend this meeting. It is not very often that you will have the opportunity of attending a meeting of so many of the big ones of the land with so little effort of time and energy and of expense as will be the case next year; and it will do you a lot of good to meet them and to hear what they have to say.

PROGRESS OF PEDIATRICS.

I. PROBLEMS OF BREAST NURSING.

It has been shown that unless the breasts of a nursing mother are regularly and sufficiently emptied, the composition of the breast milk is changed by absorption. The protein and sugar are re-absorbed first, the fat is not absorbed as rapidly, so that the remaining milk is apt to be higher in fat and lower in protein and sugar than the milk normally secreted. Completely emptying the breasts is the best way to stimulate an increased flow. The quantity of milk secreted depends on the strength and weight of the baby. A strong baby is able to get more than a weak one, and consequently gets not only a larger supply but a supply of better quality, although the weak baby may need a larger quantity and a milk with a more normal composition. Both of these points as to the quality and quantity of breast milk are important questions, the regulation and careful management of which make for successful breast nursing.

Whenever lactation is interrupted for a few days or when the breasts are drying up, colostrum bodies, which are large leukocytes which have taken on the power of emulsifying fat drops and absorbing them, reappear and disappear when the breasts are sufficiently emptied of milk. The presence of the leukocytes is for the phagocytosis of bacteria. Staphylococci are often found in milk from healthy women. Normally these organisms have no pathogenic significance only in case there is an intestinal indigestion in the baby they may become pathogenic.

It is possible to greatly increase the quantity secreted ordinarily by demanding more from the breast glands. This is well illustrated in the case of a wet nurse, who not only nurses her own baby successfully but also produces from 700 c.c.

to 1000 c.c. of milk pumped daily from her breasts or in another case where the wet nurse successfully nursed five babies.

When cow's milk is acidified the resulting coagulum is large and comparatively tough while in human milk it is more difficult to obtain a coagulum. The precipitate is finer. This is due to the low calcium content in human milk as compared to cow's milk and to the relatively greater alkalinity of human milk. Casein or the insoluble proteid is present in considerably smaller amounts in human milk, while the soluble proteid, the lactalbumin and globulin are present in much larger proportions. The lactalbumin or whey of human milk is very much more easily digestible than is the lactalbumin or whey of cow's milk. In fact in certain types of metabolic derangements, the whey of cow's milk is positively injurious, while in the same cases human milk or the casein part of cow's milk is well tolerated. The recognition of this fact is important in the treatment of pronounced decomposition or atrophy cases.

In human milk, fat is found in a much finer emulsion than in cow's milk. The percentage of fat is lowest at the beginning of nursing and increases steadily till at the end of nursing it is highest. This is a very important consideration in the examination of breast milk. Often the first drawn milk will have only 1% of fat, and it seldom has as high as 3%, while the milk taken after the baby has nursed 10 or 15 minutes or the last of the milk pumped from a wet nurse who is accustomed to having her breasts pumped will often be as high as 6% or 10% fat. This fact alone accounts for the reason why so many mothers are told that their milk is too weak to nourish the baby. It must be remembered that due to nervous influences the first time a mother has her breasts pumped she is very likely to give up comparatively little milk, not because she is unwilling to do so but under the abnormal excitement of having her breasts pumped the glands do not secrete well. This is very well illustrated among wet nurses in a hospital where they have to pump their breasts. When they start out they are often only able to get from 15 to 30 c.c., after a few days of practice they are able to pump several 100 c.c. at a sitting. Not only does the amount vary in such cases but the whole analysis is different so that estimations made of breast milk are very unsatisfactory, misleading and of necessity erroneous. Of course, a person experienced in pumping milk from breasts can often succeed in getting a normal supply where an inexperienced person would fail utterly. This is amply illustrated in the hospital, the head nurse can obtain from 50 to 100 c.c. more milk when she pumps the wet nurses than when it is left to a pupil or a new nurse to pump.

A great deal has been written on whether it is possible or not to influence the quantity or quality of milk by varying the diet of the mother. In an underfed or improperly fed mother there is no doubt that quite marked success is obtained in not only increasing the amount but improving the quality of the milk though this does not always

hold true. Starving mothers, as was the fact in the last siege of Paris, were known to be nursing perfectly healthy babies who apparently increased in weight at a normal rate. If fat is given in the diet of an underfed woman the fat in her milk will increase up to a certain point. In mothers who are eating their normal amount of food both in quality and quantity little or no definite or permanent change can be made in either the quality or quantity of her milk supply. More is often accomplished in regulating the daily life of the mother, relieving her of fatiguing work or removing causes of worry and anxiety, seeing that she gets sufficient rest, unbroken sleep and a normal amount of recreation, than can be done by changes of diet and forced feedings.

Few drugs affect the secretion of milk, the glandular extracts of the posterior lobe of the pituitary body, the pineal gland and the corpus luteum, have been shown to exert more or less powerful influences on the quantity of milk secreted. Experimentally this is true, from a practical standpoint little has been done with any of these glandular extracts in their capacity of galactagoges.

At puberty the active development and internal secretions of the ovary stimulate the breast glands to growth but it is doubtful if the ovarian secretion is the cause of the hyperplasia of breast glands during pregnancy. Fetal extracts have been found to stimulate lactation more than ovarian but whatever the normal factors are in the development and activity of the breast glands during lactation they are illusive when used artificially. The most powerful stimulant is the active sucking of the infant and the natural law of increased demand by the infant is normally answered by an increased supply as is found in the vast majority of nursing cases and illustrated in a most demonstrable way in the case of wet nurses. On the side of the mother's nervous influences, a normal life from the standpoint of work and diet play the greatest role.

The presence of certain drugs in the milk when they are being taken by the nursing mother have been proven but they are only found in traces unless the amounts consumed are very large. Alcohol is found in milk only after the consumption of large amounts and then is found only in small amounts. Opium and atropin may be excreted in the milk, though they have never been demonstrated in human milk they have been found to go over into the milk of animals. Certain drugs are found in small quantities in the milk when they are being taken, such as potassium iodide, salicylate, aspirin, calomel, arsenic, mercury, bromides, urotropin, antipyrin, iodinated oils, and the effects of saline cathartics are not infrequently noticed in the nursing baby. Salvarsan has been demonstrated in the milk of mothers who have had intravenous injections and improvement in the baby's condition is often very marked after maternal treatments.

Nervous influences, however, play the greatest role in the control of not only the amount of milk secreted but also have a very pronounced influence on the composition of the milk, often changing it

so that the baby is made most uncomfortable or even ill. What the chemical changes are, produced by such nervous influences, are not known, but certain it is from hundreds of close clinical observations. How often a mother's excitement over a theatre party, a dinner, or over the company of her friends in for afternoon tea or bridge, has meant an uncomfortable crying baby during most of the night, or an increase in the number of stools and the presence of mucus and of a green color that alarms the mother and she sends for the doctor. The avoidance of such nervous influences by giving a bottle feeding to the baby whenever the mother is under such excitement is one of the arguments for at least one substitute feeding a day. Anger, fright, grief, excessive sexual indulgence or physical fatigue may produce the same results.

The latitude given by allowing one bottle feeding a day often prolongs the period over which a mother is willing or even able to continue nursing as it will give her at some period of a day a six or eight hour interval in which to do as she pleases, go or come, work or play, as necessity or inclination demands. It also makes weaning much easier and more gradual. The baby is accustomed to the bottle and when it is increased to two and then three and finally complete bottle feedings, the transition is made with the least amount of trouble to both mother and child. If this is carried out 90% of mothers can or will nurse their babies the first three months and 50% will do so for over six months with quite a goodly proportion continuing to give one or two breast nursings till the baby is eight or ten months old. At that time most babies of American mothers should be weaned and a mixed feeding of milk and cereal started.

The transmission of toxins from mother to child through the milk has been proved. Vegetable poisons, alkaloids, glycosids and amids, as well as volatile and ethereal oils, and dibasic organic acids may go over in the milk.

Immunity both active and passive is transmitted by means of the milk from the mother to the child. The natural immunity of the newborn infant to certain of the contagious diseases is regarded as probably of intrauterine origin. The transfer of diphtheria immunity through the milk of mothers given antitoxin has been demonstrated. The infant acquires approximately from 1/15 to 1/30 of the amount of immunity acquired by the mother; the immune bodies are transferred in the lactalbumin and globulin of the milk.

There are few positive indications to weaning a newborn infant. Of course, if the mother has no milk, a wet nurse or substitute feedings must be obtained. Generalized active tuberculosis is one of the few positive contraindications to nursing. However, localized tuberculosis such as tuberculosis of the kidney, bone tuberculosis or glandular tuberculosis, does not necessarily preclude a mother nursing; it would then depend on whether the general health of the mother was impaired by the nursing; in some cases it undoubtedly would be, in others it would not. The chances of infecting the baby would have to be considered. In all chronic

diseases, as cardiac, nephritis, Basedow's, or very frail women, it is more a question of the effect on the mother's general condition and strength than on her actual ability to nurse her baby that must decide the question of weaning. Insanity is a contraindication unless someone is constantly with the mother during nursing and even then it is often a dangerous risk. Epilepsy is also a contraindication unless the mother can be watched during nursings. During prolonged, acute, infectious diseases weaning is usually to be advised because of danger of transmission and because the drain on the mother's strength is often too much. However, during short febrile attacks, if contagion or infection of the baby can be avoided or minimized, there is no need of weaning. Infection of the glands of one breast need not stop nursing of the other. In fact the infected breast will usually recover much more rapidly if it is thoroughly and regularly emptied by pumping out the milk, however painful this process may be.

In this as in most things, prevention is much to be desired over cure. Mastitis is at best a tedious and painful condition and can be successfully avoided by proper care of the breasts, a care which should begin at least six weeks before the baby is born, by regular massage, bathing and so hardening the nipples that they will not crack. If the nipples are washed off with boracic acid water two or three times a day and the breasts lightly massaged, retracted nipples pulled out either by manipulation or by suction with a breast pump, abrasions and cracked nipples will be less frequent and the greatest causes of infected breasts removed. The careful cleaning of the breasts before and after nursing are factors only to be mentioned to realize its importance. The complete emptying of the breasts is also a much neglected factor in the occurrence of breast infections. A vigorous, healthy baby will usually completely empty the breasts, but where this is not done a breast pump will prevent not only much discomfort by emptying the breast but will also prevent caking of the breast and will further prolong the activity of the breasts up to such a time as the baby is strong enough to empty the breasts by itself.

Menstruation does not usually affect the milk except in cases where the flow is excessive, in which case the quantity of milk may be diminished or if the mother is markedly weakened or indisposed, there may be a temporary change in the milk for the period of one or two days, during this time one or two extra bottle feedings may be instituted and nursing resumed when the mother is herself again. But to advise weaning because menstruation has begun is a mistake in the vast majority of cases.

Pregnancy in itself is an indication for weaning only after the third month. Often a pregnant mother is able to nurse without any effect on her general condition and health until the sixth month, after that it should be discontinued because of the mother's own condition, uncontrollable nausea or general fatigue or weakness being in themselves sufficient causes for weaning.

WILLIAM PALMER LUCAS.

ORIGINAL ARTICLES

DUODENAL FEEDING—A PRACTICAL DEMONSTRATION.*

By HARRY G. WATSON, M. D., Los Angeles.

The method of duodenal feeding was introduced about four years ago by Prof. Max Einhorn, whom I have had the pleasure of assisting for many years at the New York Post-Graduate Medical School and Hospital. The introduction of the duodenal tube has been a wonderful help in the diagnosis and treatment by medicines and food of gastro-intestinal disease, from babyhood to old age. The duodenal tube is a soft rubber tube about a meter in length and 3.5 m.m. in diameter ending in a gold perforated tip.

Dr. Einhorn's duodenal feeding apparatus is made by Tiemann & Co., of New York, and consists of the following:

1. The duodenal tube with a gold perforated tip.
2. A triple petcock, one rubber tube connecting with the duodenal tube, one with the glass of nourishment and the other with the glass syringe.
3. A flat piece of wood covering the glass.

The duodenal tube is swallowed by the patient at night and allowed to go as far as the line marked on the tube about 80 c.m. and the tip will then be in the duodenum. If there is obstruction at the pylorus or much pylorospasm the tube may be delayed or may not enter the duodenum at all. The principle of this method of feeding is to give the stomach rest, which you know is the best state for a diseased organ. The following are the principal indications for duodenal feeding:

1. Ulcer of the stomach and duodenum.
2. Any condition of the stomach where rest is indicated.
3. Gastroparesis with or without stasis where there is no organic obstruction.
4. Where nutrition by the stomach seems impossible as in cardiospasm, pylorospasm, nervous vomiting, or severe vomiting of pregnancy.
5. In inoperable malignant conditions of the stomach or cardia, if the tube can pass through the stomach into the duodenum, this will prevent vomiting and decomposition of food in the stomach.
6. Dr. Einhorn recommends it in cirrhosis of the liver.
7. In the treatment of amebic dysentery it is recommended by Dr. W. Gerry Morgan of Washington that the ipecac be administered direct with the duodenal tube. This is also recommended by Dr. Vedder of the United States army in connection with hypodermic injection of emetine which kills the ameba in the tissue while ipecac destroys them in the intestinal tract.

There are several ways of testing whether or not the tube is in the duodenum. If air is forced through, the patient can feel the air if the tip is in the stomach but not so if the tube is in the duodenum. Secondly, if the tip is in the

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

stomach an acid liquid will be aspirated unless there is achylia, while very little liquid can be withdrawn if the tube is in the duodenum, as it is usually empty and the reaction is alkaline.

Finally, if the patient be given a colored liquid to drink and the tube is in the duodenum the liquid withdrawn will be colorless but if the tip is in the stomach the liquid will be colored. Now that we are certain the tube is in the duodenum the feedings are given every two hours from 7 a. m. to 7 or 9 p. m. Each feeding consists of seven or eight ounces of milk, one raw egg and a tablespoonful of lactose. A tablespoonful of melted butter can be added to each feeding if the patient loses weight. This will bring up the day's food value to about 3000 calories, which are more than enough to sustain the nitrogen equilibrium and loss in weight. This food should be administered after it is strained, should be warm and given very slowly, requiring about twenty minutes.

The method of giving the food is simple if done properly but troublesome if done improperly as the tube will become clogged and necessitate its removal. If all goes well, the tube remains in the duodenum the whole time of treatment which is from two to three weeks.

This is the way the food is given: The food is drawn up with the syringe and then very slowly with a screw like motion is injected through the tube into the duodenum. This is continued until all the food is given. After each feeding, a little warm water should be injected through the tube and then a little air, so as to keep the tube clean and empty. Besides the feedings a pint of saline should be given once a day into the rectum by the drop method or through the tube into the duodenum.

Care should be exercised that the food is not injected too quickly or too hot or too cold as the duodenum is very sensitive, otherwise the patient will have a feeling of discomfort or nausea.

The feedings can be given by the nurse or by the patient provided a careful demonstration has been given. This method is now being used in many hospitals in this country and abroad and by many physicians in the homes of their patients.

RADIOLOGIC DIAGNOSIS OF GASTRO-DUODENAL ULCERS.*

By W. W. BOARDMAN, M. D., Assistant Professor of Medicine, Stanford University Medical School, San Francisco.

Gastric and duodenal ulcers produce functional and organic changes in the gastro-intestinal tract. Proper radiologic examination will graphically demonstrate certain of these functional and organic changes. In some, these demonstrated changes are so typical that a diagnosis of gastric or duodenal ulcer may be made on these findings alone; in others, this evidence is merely suggestive. In all cases, the radiologic evidence must be carefully correlated with the findings obtained by the other methods of examination. By this means and this

means alone can we obtain satisfactory results and avoid serious errors. The X-ray is not to be looked to as an infallible means of diagnosing gastric or duodenal ulcers. It is merely a procedure which, when properly applied and the results properly interpreted, is a most valuable addition to our other methods of examination and furnishes information unobtainable by other procedures.

During the past fifteen years and more especially since the introduction of the Rieder meal—a meal carrying three or four times the weight of bismuth subnitrate previously used—sufficient evidence has accumulated to enable us to define normal standards of shape, position, outline and motility of the various portions of the gastro-intestinal tract.

It is now recognized that the prime factor determining the shape and position of the normal stomach is the tonus of the gastric musculature and four definite types are described, the hypertonic, the orthotonic, the hypotonic and the atonic. This tonus, although an inherent property of the gastric musculature, is subject to nervous influences, locally through Auerbach's plexus and generally by way of the vagus and splanchnics. Other factors influencing the shape and position of the normal stomach are the quantity of gastric contents, the presence or absence of gas in the intestines, the position of the diaphragm, the size and position of the other abdominal organs, the condition of the pelvic floor and anterior abdominal walls, the posture of the bony skeleton and the position of the body.

The outline of the stomach, as seen either in the postero-anterior view or in the lateral view, is smooth and regular, showing the depressions produced by the peristaltic waves. Screen examination will show the gradual passage of these depressions toward the pylorus.

The motility of the stomach depends upon two factors, the peristaltic activity of the gastric musculature and the action of the pylorus. By means of the fluoroscope, one is enabled to note the depth and apparent force of the contraction waves and to divide cases into three groups depending upon the evidence of normal, increased or decreased peristaltic activity. Emotional reflexes, the nature of the food and abdominal massage may markedly alter the peristaltic activity.

The pylorus relaxes soon after the administration of the usual opaque meal allowing the passage of some of the material into the first portion of the duodenum. The relaxations and the contractions of the pylorus are, according to Cannon, controlled by the degree of acidity upon the gastric and duodenal sides of the sphincter respectively. The rate of gastric emptying depends, therefore, upon the combined action of gastric peristalsis and pyloric relaxation. The normal stomach empties itself in from two to four hours depending upon the character of the meal, the type of the stomach, the posture and the emotional state of the individual. The presence of a residue in the stomach six hours after the administration of the meal is conclusive evidence of the presence of some disturbance in the normal balance between the

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peristaltic activity of the stomach and the resistance offered by the pylorus or the small bowel just beyond. In practically all cases, this disturbance is found in the increased resistance offered by the pylorus or duodenum and not in the simple decrease in the force of the peristaltic contractions.

The duodenum does not lend itself so readily to direct radiologic examination as does the stomach. The first or ascending portion can, however, with proper technic be demonstrated in all normal cases as a more or less triangular area with horizontal base and apex directed upward. The base is almost completely separated from the pyloric antrum by the contracted pylorus, only a narrow shadow corresponding to the pyloric canal joining the two areas. This duodenal shadow should be of uniform density and regular in outline. The descending and transverse portions of the duodenum are rarely seen in radiologic examinations and are of little diagnostic importance. Special procedures may be adopted to facilitate the radiologic study of the duodenum such as the administration of a bismuth water mixture, which passes rapidly into the duodenum, especially if pressure be exerted on the pyloric antrum, the placing of the patient on the right side for several minutes after the administration of this meal, and the direct filling of the duodenum. The time of duodenal emptying is evidently dependent upon the time of emptying of the stomach. Any residue present in the duodenum after the stomach has completely emptied indicates disturbance in duodenal motility.

The filling of the normal stomach demands consideration. By virtue of the tonus of the gastric musculature, the walls of the stomach are constantly exerting a uniform pressure upon their contents, subject to local variations in pyloric antrum caused by the peristaltic contractions. As a result of this constant uniform pressure, the gastric contents do not accumulate in the most dependent portions of the stomach, but are molded in a more or less cylindrical form, the gas, which is normally present, occupying the highest level. In the fasting stomach with the patient erect, the screen shows the gas shadow directly under the left diaphragm. This shadow is roughly conical with its apex downward. As the opaque meal enters the stomach, it is seen to pass downward and to the left to the apex of this gas shadow where it accumulates for a moment before passing on into median and pyloric portions of the stomach. The amount of the meal accumulating here roughly measures the degree of tonus of the gastric muscle, since it shows the weight of the material necessary to overcome the muscle contraction. The meal descends into the lower portion of the stomach as a band-like shadow of practically uniform diameter, except for the appearance of peristaltic waves which are readily recognized. The stomach accommodates for increasing quantity of the opaque meal by a gradual and uniform increase in the transverse diameter of the stomach. With excessive quantities, the cardiac portion enlarges somewhat more than does the pyloric and median portions.

Gastric Ulcer, Simple.—With this brief review of the normal radiologic findings, we may consider the functional and organic changes resulting from the presence of gastric or duodenal ulcers.

Gastric ulcers are variously classified. For our purpose, we may recognize two groups: (1) The first group including those ulcers which produce no radiologically evident organic defects and manifest themselves only by functional abnormalities; (2) the second group including those ulcers which produce radiologically evident organic defects as well as functional abnormalities. In the first class will fall the simple ulcers with little or no scar contraction; in the second class, the chronic ulcers with scar contraction, the perforating ulcers and the penetrating ulcers.

The radiologic diagnosis of simple ulcer depends upon the recognition of various functional disturbances which experience has shown may be excited by such ulcers. These suggestive changes are:

1. Possible spasmodic filling defect in the greater curvature.
2. Possible spasm of the greater curvature.
3. Possible spasmodic hour glass.
4. Possible pressure tender point over stomach.
5. Possible six-hour residue.
6. Possible increased peristalsis.
7. Possible cardio-spasm.

Hemmeter and Jollasse, in 1906 and 1907, advanced the idea that simple ulcers might be diagnosed by the adherence of bismuth to the ulcer base after the rest of the stomach had emptied. Unfortunately, their experimental work has failed of confirmation and their clinical cases were probably not simple ulcers.

In observing the process of filling of the stomach, occasionally there is noted a defect on the greater curvature deeper and more abrupt than the depression caused by a peristaltic wave, showing no corresponding depression on the lesser curvature, nor any movement toward the pylorus. With increasing distension of the stomach, this defect may disappear or it may persist. Continued or repeated observations may demonstrate that this is not a constant phenomenon. Abdominal massage tends to accentuate the condition, injections of atropine to cause its disappearance. This defect is the result of a local spasm of the gastric muscle excited in the vast majority of cases by an ulcer on the lesser curvature at a point about opposite the site of the spasm. Such local spasms have been reported as occasionally occurring under strong emotional strain and reflexly from irritation about the appendix, gall bladder, duodenum, pelvic organs, etc.

The demonstration of a spasmodic hour glass contraction is one of the most striking indications of gastric ulcer. The condition may be evident during the filling of the stomach, may spontaneously come and go during the examination, or may only appear after abdominal massage. If present during the administration of the opaque meal, the material is seen to accumulate in the upper portion of the stomach as a more or less conical shadow with apex down. Usually

from the lowest point of this shadow, a thin stream of the opaque material may be seen trickling into the lower portion of the stomach. The rate of filling of this lower pouch of the stomach depends upon the completeness of the spasmodic contraction. Occasionally, under the influence of emotional reflexes, change of position, gentle abdominal pressure, or an injection of atropine, the spasmodic contraction disappears and the stomach suddenly presents a normal outline. Vigorous abdominal massage will frequently re-awaken the spasmodic contraction. The diagnostic significance of this finding is great, although cases occur in connection with extra gastric irritation and emotional disturbances. It is often exceedingly difficult to differentiate the spasmodic hour glass contraction from the organic hour glass contraction or from the hour glass contraction resulting from both organic and spasmodic contractions. Massage, change of position, atropine, frequent and repeated examinations will usually demonstrate the true nature of the contraction. A pseudo hour glass appearance is occasionally observed in atonic stomachs and in stomachs subjected to pressure by a descending colon distended with gas.

The finding within the stomach shadow of a localized area tender to pressure and moving with movement of the stomach is accorded considerable diagnostic importance by many Continental observers. The presence of such a definitely localized area of tenderness has been unusual and of little diagnostic value in my experience.

Delay in the emptying of the stomach in simple gastric ulcer is by no means constant. As there is no appreciable alteration in the peristaltic activity, such delay indicates disturbed pyloric function. Slight disturbance may be accounted for by the presence of an excess of hydrochloric acid which, by its action in the duodenum, delays the normal opening of the pylorus. A delay of six hours cannot be explained on this ground and is dependent upon pyloric spasm excited by the irritation from the ulcer. Such spasm is usually associated with ulcers near the pylorus.

Increase in the peristaltic activity of the stomach may be noted in cases showing delay in emptying and indicates the attempt of the gastric musculature to compensate for the increased resistance of the pyloric sphincter. The presence then of increased peristaltic activity with a six-hour residue evidences an obstruction. The demonstration of the type of the obstruction, whether spasmodic or organic, is frequently difficult. The administration of the bismuth water mixture, frequent repeated examinations, especially after the administration of atropine, the use of Einhorn dilators, etc., will usually decide the question. With simple spasm of the pylorus, there is no irregularity of the pyloric antrum, pyloric canal or duodenal cap; in organic obstruction, such irregularities are the rule.

Cardiospasm, with resulting delay in the entrance of the food into the stomach, is occasionally excited by ulcers in the cardiac portion of the stomach. The presence of gastric ulcer must

therefore be considered when cardiospasm is demonstrated.

The demonstration of one or more of these conditions is suggestive but not diagnostic of simple gastric ulcer, since each one although occurring most frequently with gastric ulcer may be excited by other gastric or extra gastric conditions.

Gastric Ulcer, Organic.—We recognize three types of ulcers producing radiologically demonstrable organic as well as functional abnormalities. In the first group we place the chronic indurative ulcers found along the lesser curvature and about the pylorus; in the second group the perforating ulcers; and in the third group, the chronic penetrating ulcers.

Indurative Ulcer.—The radiologic evidence of chronic indurative ulcer of the middle of the lesser curvature differs in some respects from that of chronic indurative ulcer about the pylorus, so they will be considered separately. Chronic indurative ulcer of the middle of the lesser curvature may show the following changes:

1. Possible filling defect of lesser curvature.
2. Possible spasmodic filling defect of greater curvature.
3. Possible local spasm of greater curvature.
4. Possible hour glass stomach.
5. Probable displacement of pylorus to the left side.
6. Possible pressure tender point.
7. Possible interference with the free movement of the stomach on respiration, palpation, forcible contraction of abdominal muscles, or change of posture.
8. Possible displacement of duodenal cap.
9. Possible six-hour residue.
10. Possible increased peristaltic activity.
11. Improbable dilatation and atony of stomach.
12. Improbable reversed peristalsis.

The filling defect of the lesser curvature is occasionally observed as a disturbance in the smooth and regular passage of the opaque meal along the lesser curvature. It is usually more readily demonstrated by the administration of the bismuth water mixture than by the regular opaque meal. If the induration is marked and properly located, the defect will be evident after the administration of the entire opaque meal. In the full stomach the defect is usually slight, manifesting itself more frequently as a lack of the normal sharp clean-cut edge of the stomach shadow than by any gross irregularity. A right lateral view will occasionally demonstrate such a defect not apparent in the usual antero-posterior view.

The spasmodic filling defect and the local spasm of the greater curvature, as well as the spasmodic hour glass contraction, have the same origin and significance as in the simple gastric ulcer. As previously mentioned, it is important and usually possible to differentiate between organic and spasmodic hour glass. It is more difficult to recognize the hour glass due to combined organic and spasmodic contraction. Hertz has called attention to an interesting type of hour glass stomach found especially in these chronic saddle ulcers and radiologically evident only with the patient in the

upright position. There is rarely any difficulty experienced in recognizing the hour glass stomach produced by gastric carcinoma. Syphilis may produce a partial hour glass contraction; the isthmus is apt to be much broader and wider than in the true hour glass.

The normal pylorus lies slightly to the right of the midline. The presence of a chronic indurative ulcer may so shorten the lesser curvature and alter its normal contour that the pylorus is drawn more or less to the left side.

The presence of a pressure tender point needs no further comment other than that it is probably more frequently found in this and the succeeding types of ulcer than in the simple ulcer.

The normal stomach being firmly fixed only at its cardiac and pyloric portions enjoys a considerable range of motion with forced respiratory movements, vigorous contraction of the abdominal muscles, change of body posture, and direct abdominal pressure. In this type of ulcer, such free movement of at least a portion of the lesser curvature is usually absent. It must be remembered that liver abscess or other liver enlargements, gastric carcinoma, etc., may cause a similar limitation of motion.

Displacements of the duodenal cap naturally follow the left-sided displacement of the pylorus previously described. The cap is then seen tilted to one side or the other, usually the right side, instead of sitting squarely on the pyloric antrum. There is, however, such a wide range of position for the normal duodenal cap that such evidence is but of minor importance.

Distortions of the duodenal cap may result from the presence of adhesions between the duodenum and the ulcer. Such distortions are, however, difficult of positive recognition and may result from such a variety of lesions (duodenal ulcer, gall bladder disease, etc.) that in the average case they are of little diagnostic importance. If, by special methods of investigation, such distortions are definitely demonstrated to be constant, they assume much greater importance. The recognition of their cause, however, still remains a difficult problem.

As in the simple ulcer, so in this type of ulcer, the occurrence of a six-hour residue is by no means constant. Its presence indicates pyloric obstruction, the nature of which, organic or spasmodic, can usually be determined as already described.

The occurrence and significance of increased peristaltic activity in conjunction with pyloric obstruction has already been considered.

The occurrence of dilatation and atony and reversed peristalsis is very unlikely. Their consideration may be deferred till later.

Indurating Ulcer about Pylorus.—The radiologic evidence of chronic indurative ulcers about the pylorus may be summarized as follows:

1. Possible spasmodic filling defect of greater curvature.
2. Possible local spasm of greater curvature.
3. Probable irregularity in the outline of pyloric antrum, pyloric canal or proximal portion of duodenal cap.

4. Probable disturbance of the peristaltic activity of lesser curvature near the pylorus.

5. Probable unusual fixation of pyloric portion of stomach.

6. Probable increased peristaltic activity.

7. Possible pressure tender point.

8. Probable six-hour residue.

9. Improbable dilatation and atony of stomach.

10. Improbable reverse peristalsis.

The significance of the local spasmodic contraction has already been considered.

As a result of the induration of the stomach wall and the presence of peritoneal adhesions, the outline of the pyloric portion of the lesser curvature is frequently irregular and poorly defined, and the usual peristaltic contractions in this region may be absent, the indurated wall preventing their appearance. In several cases I have observed a horizontal position of the pyloric portion of the lesser curvature, apparently explained by the fixation of this portion of the stomach to the under surface of the liver. A similar appearance is sometimes noted in cases presenting marked enlargement of the liver from various causes.

A further result of the presence of the thickened scar tissue is frequently evidenced by the ragged irregular outline of the pyloric antrum and by our inability to satisfactorily demonstrate the pylorus, the pyloric canal or the duodenal cap. If the duodenal cap be demonstrated, it is apt to be distorted or displaced. Pyloric carcinoma may produce somewhat similar findings, but the differentiation is readily made.

The finding of abnormal fixation of the stomach, the occurrence of increased peristaltic activity with delay in emptying and the presence of a pressure tender point need no further discussion.

A six-hour residue is common, but may be absent in this type of ulcer. It is dependent upon pyloric obstruction usually of organic origin.

If the organic obstruction be of high degree, marked retention with dilatation occurs. The dilated stomach may lie almost entirely to the left of the midline. However, in extreme cases, the pyloric portion may lie well to the right of the spine. The occurrence of reverse peristalsis is rarely observed and merely indicates a high degree of pyloric obstruction. Atony occurs as a late change and is readily recognized by the sagging of the stomach and the accumulation of the opaque meal in the most dependent portion.

It is thus seen that in chronic indurative ulcer, as in the simple ulcer, the radiologic examination furnishes very suggestive and valuable evidence which, however, demands careful interpretation, since pyloric carcinoma, syphilis, gall bladder disease, duodenal ulcers, chronic appendicitis, etc., may each produce one or more of the gastric changes just described.

Perforating Ulcer.—The radiologic evidence of chronic perforating ulcer is usually more striking and absolute than in the preceding types. The findings may be summarized as follows:

1. Possible filling defect or local spasm of the greater curvature.
2. Possible hour glass contraction.

3. Irregularity of the stomach outline, usually of the lesser curvature, together with the presence of a shadow beyond the stomach area but closely connected with it.

4. Possible disturbance of peristaltic activity.

5. Unusual fixation of that portion of the stomach showing the projecting shadow.

6. Possible pressure tender point.

7. Possible displacement of pylorus to the left.

8. Possible six-hour residue.

9. Possible dilatation and atony.

10. Possible reverse peristalsis.

Hour glass contraction is very common in this type of ulcer and is frequently partially organic and partially functional.

The characteristic finding is a shadow outside the normal stomach area. This depends upon the presence of the opaque material within the crater of a chronic perforating ulcer. The ordinary postero-anterior view will demonstrate such perforating ulcers, if the perforation be at right angles to the lesser curvature. Right lateral views will demonstrate those arising from the anterior or posterior surfaces of the stomach. Frequently that portion of the opaque meal lodged in the deep crater of the ulcer is retained after the stomach proper has emptied itself. The demonstration of this projecting shadow is not only characteristic of a chronic perforating ulcer, but definitely locates its position. Deep carcinomatous ulcers may show irregular shadows, but should cause no confusion in diagnosis.

The other possible findings need no further discussion other than to state that, as the pylorus is frequently uninvolved, a six-hour residue may be absent. When it occurs, it results either from organic or spasmodic contraction of the pylorus, or from a tight hour glass contraction which causes delay in the passage of the opaque material to the pyloric portion of the stomach. Here the six-hour residue may be seen in the cardiac pouch of the stomach.

As has been stated, there is at times a six-hour residue retained in the crater of the ulcer.

Acute perforating ulcers are rarely subjected to radiologic examination. Cases recovering without surgical intervention show more or less marked deformities as a result of the perigastritis excited by the perforation. The deformity is apt to be an organic hour glass.

Penetrating Ulcer.—The radiologic findings in chronic penetrating ulcer, as in chronic perforating ulcer, are characteristic and diagnostic. They may be summarized as follows:

1. Possible filling defect or local spasm of the greater curvature.

2. Possible hour glass contraction.

3. Presence of opaque material in an area outside of the normal stomach shadow and surmounted by a small gas shadow.

4. Possible disturbance of peristalsis.

5. Unusual fixation of the stomach at one point.

6. Possible pressure tender point.

7. Possible six-hour residue.

8. Probable six-hour residue in abnormal area.

9. Improbable dilatation, atony and reverse peristalsis.

Here the characteristic finding is the presence of opaque material in an area outside the normal stomach area and surmounted by a bubble of gas. This results from the presence of the opaque material in the cavity produced by the extension of the ulcer into the liver, pancreas or other nearby structures. The cavity may be more or less distant from the stomach, the sinus connecting it with the stomach usually being evident in the radiographs. The upper border of the opaque material assumes a horizontal position, the remainder of the cavity being occupied by gas. As a rule, a six-hour residue is retained in this cavity.

Duodenal Ulcer, Simple.—Duodenal ulcers most commonly occur in the first or ascending portion, that portion which lends itself most readily to radiologic examination. As with gastric ulcers, we recognize two groups, one evidenced only by functional changes, the simple duodenal ulcer, the other showing both functional and organic changes, the chronic ulcer with scar formation, etc.

The radiologic evidence of simple duodenal ulcer, while not direct and positive, is usually very strongly suggestive and may be summarized as follows:

1. Probable normal stomach, frequently of hypertonic type.

2. Improbable spasm of greater curvature.

3. Probable increased peristaltic activity in stomach.

4. Probable early emptying of stomach.

5. Possible pressure tender point over duodenum.

6. Possible delay in passage of duodenum.

The demonstration of a radiologically normal stomach, or one showing practically none of the changes of gastric ulcer, is important in that it tends to exclude the stomach as the site of the morbid process. Rarely, a slowly moving spasm of the greater curvature may occur (Carman) but lacks any specific diagnostic value. Hypertonicity is occasionally noted normally but is especially common in simple duodenal ulcer. It is also associated with disease of the gall bladder.

In simple duodenal ulcer, early emptying of the stomach is very commonly noted, no residue being found in the stomach after one or two hours. As has been said, the rate of emptying of the stomach depends upon the force of the gastric peristalsis and the resistance of the pyloric sphincter. Peristaltic activity is usually quite markedly increased in this type of ulcer, the peristaltic contractions appearing much deeper and at times more numerous than normally. Carman has recently especially emphasized this frequent association of duodenal ulcer with this type of gastric peristalsis. Pyloric resistance is also apparently decreased in simple duodenal ulcers as the opaque material enters the duodenum earlier and more rapidly than normally. Whether this early and frequent relaxation of the pylorus is dependent upon a more rapid neutralization of the acid chyme in the first portion of the duodenum or to some disturbance of the pyloric reflex itself, is not yet

clear. This picture of increased peristaltic activity with early emptying is frequently noted in gastric carcinoma without obstruction.

The demonstration of a pressure tender point definitely located over the duodenum has in my experience been unconvincing. Such pressure tender points, when present, probably indicate local peritoneal inflammation.

The lagging of the opaque material in the duodenum to such a degree that the greater portion is outlined, although occasionally seen in duodenal ulcer, occurs also in various other conditions. It therefore lacks any diagnostic significance.

Organic.—Chronic duodenal ulcers with scar contraction may present the following radiologic evidence:

1. Probable normal stomach.
2. Improbable spasm of the greater curvature.
3. Possible hypertonic stomach.
4. Possible dilated stomach.
5. Probable increased peristaltic activity.
6. Probable six-hour residue.
7. Possible pressure tender point over duodenum.
8. Probable distortions or irregularities of duodenal cap.
9. Possible residue in duodenal cap.

The first three findings have already been considered.

Dilatation of the stomach occurs as a result of obstruction and retention as in gastric ulcer with obstruction. In duodenal ulcer, the pyloric portion of the stomach is usually more to the right side than in gastric ulcer with obstruction. Increased peristaltic activity is apt to be present either with the hypertonic stomach or with the dilated stomach.

The six-hour residue is the result of duodenal obstruction from scar contraction and may be of an extreme grade.

The indurated ulcer area produces more or less distortion and irregularity of the duodenum radiologically evident in the outline or position of the duodenal cap. The demonstration of such permanent irregularity or distortion is sometimes readily accomplished, but often requires the use of special methods, frequently repeated examination, radiographs with the patient in different positions, direct filling of the duodenum, etc. The presence of a constant defect in the duodenal cap evidences the presence of some definite morbid process, which may, however, be secondary to gall-bladder disease and various other conditions as well as to chronic duodenal ulcer. With chronic penetrating or chronic perforating duodenal ulcer, we may find the opaque material beyond the normal duodenal shadow as in similar ulcers of the stomach. Duodenal diverticulitis will give a picture closely simulating a penetrating ulcer of the duodenum.

A six-hour residue in the duodenal cap or a residue in the duodenum after complete emptying of the stomach indicates duodenal obstruction. This usually follows chronic duodenal ulcers but may be associated with gall-bladder disease, duodenal diverticulitis, new growths, etc.

In settling upon a plan of treatment, the radiologic evidence is of the utmost value. The one

absolute indication for surgical intervention is the presence of obstruction with retention. The question of operative procedures in cases showing no retention is open for discussion but does not fall within the scope of this paper.

In conclusion, I may state that the radiologic examination of the gastro-intestinal tract, when properly carried out and properly interpreted, furnishes information unobtainable by other procedures and that when considered with the findings by the other methods of examination is a most valuable aid in the diagnosis of gastric and duodenal ulcers.

MEDICAL MANAGEMENT OF DUODENAL ULCER.*

By L. G. VISSCHER, M. D., Los Angeles.

Notwithstanding the inspiring revelations which come to us from the physiological laboratories, from the darkrooms of our radiologists and from the surgical clinics, is the interpretation of an ulcer's conduct often a very baffling thing. Long ago have I learned to correct, amplify, change or reverse my diagnosis, while managing its treatment; and of equal importance with the findings at the outset of our observation must we look upon the manifold therapeutic reactions as they emerge during a so-called ulcer-management. It should be intimately interwoven with differential diagnostic considerations. Where we have time allowance of from six weeks to six months to restore our patients to health and happiness, or to deliver them into the hands of the surgeon, should that span of time be devoted to constant observations of detail. We may have to shift our plan of treatment as we learn the characteristics of our cases. We must be prepared by the very success of our method of treatment to prove that our patient was not suffering of the ailment we were treating him for, having learned in the meanwhile that this is the one thing he is not afflicted with. It may be well to accentuate the changeable nature of our therapeutics in the face of the common impression that duodenal or pyloric ulcer treatment is a routine treatment par excellence, to be grouped under two or three headings, say bed-rest cure with initial starvation, following sliding feeding with increasing doses of milk, with or without additional cream, type Von Leube cure, or similar initial bed rest with rapidly increasing feeding of milk, eggs and meat, type Lenhartz; or ambulatory cure all together, with large amounts of cream and olive oil. But how are we going to determine which method is to succeed or where and when it will fail? This can only become manifest as we are taking care of the case. By rationally applying the underlying principles of these different methods at the appropriate moment, will we be more liable to get through with the case successfully than by adhering strictly to one method until the sweet or bitter end.

One of the first decisions to be made is whether we shall put our patient to bed or not, this depending upon people and circumstances; some of our patients cannot take to the bed, and older

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people, I find, do better by being allowed to move about in their own accustomed fashion. Imperatively do call for rest in bed, cases of bleeding, whether manifest or occult; frequent vomiting, pressure pain in the right upper quadrant, declared emaciation, pregnancy, active menstruation, diarrhea, fever and scant urine, with numerous hyaline casts and very ptotic individuals.

A bleeding case will do best by complete bed rest, complete functional rest of stomach, by either an opium and belladonna suppository, or morphine-atropine hypodermic, to be repeated as needed. It is rather rare to have a patient bleed fatally and our decision whether or not to operate has to be made with more good luck than wisdom. By all means does it seem questionable what good adrenalin with its secondary vaso-dilatation, ergot, with its bloodpressure raising effect; bismuth or iron chloride with its foreign body irritative effect will do. Normal horse serum is being used as in hemophylia; but will it materially help in forming a large thrombus? Stockton used it in powdered form, called it coagulose. But it seems that absolute rest, typical opium rest, with an ice bag suspended over the motionless patient is the best we can do. And in earlier days in severe bleeding was venesection and tying of arms and legs to spare the peripheral blood resorted to.

More modern would be transfusions; or infusion of defibrinated blood of an acceptable group; and opening of the abdomen in search of the bleeding spot under local anesthesia or nitrous oxide and oxygen. A case, with hemoglobin below 20, which I saw in consultation with Dr. Millspaugh was so treated, and quickly and brilliantly restored to health.

In bleeding of minor degree would rectal drip with solution of calcium chloride seem appropriate. Gelatin I have never used and where hyperacidity is not too conspicuous a feature will rectal alimentation for a few days allow a complete pyloric rest. Profuse hemorrhage seems to reduce considerably the Hcl secretion—and many a case gets well fast after a severe bleeding. An objectionable feature of rectal feeding is the stimulation of Hcl secretion,—and of gastric motility as well. But those cases which show scant urine, emaciation, some degree of acetonuria through previous vomiting and starvation will be benefited by rectal intake at intervals or by continuous drip of hypotonic solutions.

Where bleeding is not a feature, and still our patient is in bed, will constant hot poulticing as Von Leube recommended, or intermittent steaming for two hours at a time two or three times a day contribute to the relaxation of the pylorus, also reducing the congestion of the inflamed organ. The hot poultice furthermore should be used as a tool by an observant nurse. Whenever in the course of a day some heaviness or fullness is complained of, slight nausea or pain not relieved even by alkali, does it look as if retention is the cause, and a hot poultice applied at that instant will bring relief. An observant nurse, who by some inexplicable predilection has decided to really manage for us such cases can do very much to

further the success of our cure. An occasional hiccup, a little belching, some uneasiness of the patient will prompt her to look at the abdomen and note visible distension, to elicit a slight slush, and she will lengthen the interval of feeding, reduce the quantity of nourishment, or even stop all feeding for that day.

Precision, pedantic precision is necessary but not so much of dosage as of observation of indications. Some of our patients, time-long sufferers, have learned their lesson, and they are our best assistants, if we discuss their case with them methodically, and analyse their daily symptoms.

In the night will a Priessnitz bandage for those who go to sleep in it do great good. Night rest is of the greatest importance as a nerve restorer and because it indicates absence of harm done to the ulcer during that period. What is the harm? The disturbance of its rest, necessary to its healing. It seems obvious that the main damage is done by corrosive action of free Hcl. and the other by spastic contraction of the pylorus and disturbances of the ulcerbase. Both clinical and radiographic observations show that in duodenal ulcer hypermotility, increased peristalsis is the rule—which, however, does not run parallel with hyperacidity; neither does this mean, that total clearing of the stomach does take place in shorter time.

The opposite may be true, even without any stenosis by cicatrix, band or kink, even with a fully patulous pylorus will the process of evacuation gradually come to a standstill, with the result of a residue of increasing acid titre at two, three and four hours after meals. This being the time when the patient suffers pain, or when he in the middle of his sleep awakens with pyrosis. This is the time for following measures, hot applications; administration of magnesia, or soda, or both; the hypodermic of atropine, and, if need be, the introduction of the stomach tube. And this moment, this event has to be watched at its approach and be properly met. Who will do it? The attentive nurse or the observant patient. How little benefit do we derive from initial examination as to stomach motility and secretion, as disturbances of these functions will arise under varying conditions. One of the problems in ulcer management is the treatment of hyperchlorhydria and the consideration of all its causes. We all know, that a sufferer of duodenal ulcer, pure and simple, will often suffer greatly in the night, at 1, 2, 3 or 4 a. m., when he is alone with his misery, and nothing but pain and worry for companion. The next night perhaps after a pleasant evening of diversion will be passed in restoring sleep. Some morning hour of 10-11, especially when annoying business has been anticipated, will be torture; next day, after an identical breakfast, no trouble at all. A woman, in bed with her ulcer cure, approaches her menstruation; and for a day or two all our measures have to be altered. What does it indicate?

That nervous influences profoundly alter the secretion, from day to day, from one meal to another. And in as much the ulcer healing de-

mands protection against the corrosive action of free Hcl, does it become part of our treatment to follow these variations by our single methods of correction. Any one has observed how patients will be able to digest fat at some time better than at other times; again, that some patients tolerate fats at all times, and others are invariably distressed by them. Now one leitmotive of ulcer management is liberal introduction of cream, unsalted butter, olive oil, almond oil, the rationale being that these fats decrease Hcl. secretion, and greatly increase the caloric value of our food. So then, have the cream on ice, have the oil in the house and use it, as indicated; and stop as soon as evident distress is the result. Still will one repeatedly read publications describing such methods of treatment, that untoward effects usually disappear after a few days of persistent continuation. Now this is wrong, once at the treatment should there be no distress or discomfort; because every time does it mean fresh injury to the ulcer, which is the same as a setback of so many hours or days. The relief, if not seen to by attendant, will be brought about in two ways: nausea and vomiting, or abdominal distress, bloating, diarrhea accompanied by headaches and biliousness. But this means an error in management and it calls for reduction in fat constituents; in reduction of quantity or lengthening of interval, in administration of magnesia. Magnesia has other advantages over soda, it binds more chlorine, it does not liberate carbon dioxide, which distends the stomach, and it does not form sodium chloride, which is reabsorbed, but magnesium-chloride, which leaves the body in the feces. One of the principles of ulcer management is the reduction of chlorine constituents, so that in hyperchlorhydria, from whatever cause, salt or salted food should be withdrawn or greatly diminished. The best and most effective way of removing the corroding Hcl, especially towards night during the first week or so of the treatment, when acidity still runs high, is the use of the stomach tube. There is no harm whatever connected with its introduction if properly performed in the case under discussion: duodenal or pyloric ulcer.

It is different with small curvature ulcer. In the clinic practice of Sippy, this most inspiring and brilliant teacher, is it made a rule in ulcer or hyperchlorhydria management, to stop feeding at about 4 p. m. the tube then passes at about seven for the double purpose of removing the acid gastric contents and determining its titre and degree of retention and again, on indication of slight distress or on presence of slushing, another aspiration is done at about ten. The stomach is now left at rest for all the night. The relief is complete and soon permanent. In the management of such cases of retention which for some reason or another do not reach the surgeon, do I teach my patients to use the tube at night before going to bed. I would feel inclined to divide all ulcer treatment into two periods: the treatment during function of digestion, the treatment during the period of rest, which is the night, and in some cases lasts from 24 to 72 hours at the onset of our

cure. During digestion is it a matter of food selection as to acid binding quality (casein and albumin) as to acid depressing quality (cream, oils) as to quantity dependent upon degree of spasticity amount of inflammatory swelling; as to interval. During functional rest the night and early morning have the ideal time for local application. Large doses of bismuth subcarbonate or of milk of bismuth may be given in the night—either after lavage or at bedtime, the last feeding taking place at about five or six being small in bulk. With it may be given one or more ounces of olive oil—or even (when olive oil is not so well tolerated, and still the laxative lubricating effect on the bowels is desired liquid paraffine) again in the morning hour, anywhere from 4 a. m. on, the time for the administration of Karlsbad sprudel salts in warm water.

At the outset of any ulcer cure it is well to administer calomel or blue mass or podophyllin followed by a saline; and during the further management is a rigid attention to state of liver and bowel of the utmost importance. Of late years have I become somewhat prejudiced against the use of large amounts of flesh food in the hyperchlorhydria concomitant with ulcer. But a freer use of well cooked rice or other cereals has proven of greater assistance.

There are methods of more recent perfection, which in the hands of some have given excellent results. Especially do I mean Einhorn's duodenal feeding; only lately have I started their use, so cannot express any opinion. While East did I see some very good results, but also many complete failures, even in the hands of competent men.

I am well aware that in these fifteen minutes I cannot do justice to the vast material by which one is surrounded, who sees many cases of this type. I could have spoken of the atrophine treatment to which I am very partial; of the use of orthoform and anesthesin; of the use of silver nitrate, either in form of lavage 1 to 5000 twice a week or in solution on Boas recommendation, before meals, which drug has to be handled with great care and discrimination; of the use of peroxide of hydrogen, which for the time being reduces hyperchlorhydria. Nor was there time to mention the management of arterio-sclerosis, which Ophüls has shown to be so often at the bottom of ulcer.

But I have chosen to express my conviction that there is no one special method of treating ulcer of the duodenum, even not a method of methods, as Dr. Weinstein formulates, but that it should be our aim to cover the raw spot, to reduce the inflammation, to relax the spasticity, to diminish the hyperchlorhydria, to improve the general health. I should have spoken of exercise, of better living, wholesome living, of abandoning coffee, alcohol and tobacco and of the cheerful attitude which is justifiable in the face of the promise on honest basis of observation, that ulcer of the duodenum if not complicated and caused by other surgical lesions and if not complicated by adhesions or stenosis, is curable, medically, dietetically, hygienically in a large percentage of cases.

GASTRODUODENAL ULCER; SYMPTOMATOLOGY AND DIAGNOSIS.*

By EMIL SCHMOLL, M. D., San Francisco.

The therapeutic results of surgical intervention in affections of the stomach, the frequent opportunity we now have to control our clinical findings autopsically, have led to a complete revision of even recent teachings on gastric and duodenal ulcerations. The French clinician Soupault was the first one to consider pain occurring three or four hours after feeding combined with the periodicity of symptoms as characteristic for ulceration involving the pylorus; in 23 cases operated on by Hartman he was able to prove his contention: In all cases ulcer either involving the pylorus or located just above or below the pylorus was found.

It remained, however, for Moynihan to popularize this view based on the overwhelming evidence of a great many cases treated by surgical means. According to his enormous experience the diagnosis should be based on the history of the case. Hunger-pain and periodicity which, if typical, he considers sufficient proof even in the absence of physical symptoms. The anamnesis is everything, the physical examination nothing, as he expresses it.

The most characteristic symptom of duodenal ulceration is pain which appears when the patient begins to feel hungry in a definite space of time, which varies according to the character and the consistency of the food. Usually it appears at 11 a. m., 4 p. m. and if sufficiently severe awakens the patient at about 2 a. m. Most patients know that their pain is almost immediately relieved by eating; a glass of milk or some crackers taken at the time of the paroxysm insure a few hours' relief. Moynihan characterized these complaints as "hunger pain," a term which has been generally accepted.

The second symptom of duodenal ulcer is furnished by the periodicity of the attack. At the beginning of the affection periods of pain occur separated by months and even years of complete relief, during which the patient believes himself completely relieved and partakes with impunity of all varieties of food. As the disease progresses the "interval periods" become shorter and shorter, until finally the patient is in almost uninterrupted pain.

Ten years have elapsed since this symptom complex has made the diagnosis of duodenal ulcer a comparatively easy one. In a great many cases the accuracy of Moynihan's contention has been verified and the diagnosed ulceration been found autopsically. In other cases, however, in spite of characteristic history no ulceration could be discovered, while in other cases the presence of an ulceration failed to reveal itself by any symptoms or caused phenomena which did not possess any of the characteristics emphasized by Moynihan.

In the discussion we will first try to analyze the symptomatology of ulceration at or immediately above or below the pylorus. It is with full intention that I have failed to observe the usual division

into duodenal and gastric ulceration for the following reasons: In the cases I observed personally I have failed to see any clinical difference between the symptoms produced by gastric, pyloric and duodenal ulcerations, as long as they were located immediately near the pylorus and interfered with its normal action, an opinion in which I concur with Soupault and Kemp. On the other hand the distinction between gastric and duodenal ulceration is usually drawn according to the position of the pyloric vein. Anatomical investigation done by Ferrari shows, however, that in only four out of 16 cases the pyloric vein was located at the pylorus, while in the other 12 cases there was a difference of 1.5 to 4 cm. on either side of the pylorus.

The following conclusions are drawn from my own material: Out of about 160 cases in the last six years, only 46 could be utilized for statistical purposes, having been observed by me clinically for periods of from six months to several years. In the other cases the diagnosis could not be considered as sufficiently founded either because they did not present a sufficiently complete symptomatology or because they were seen only once or twice in consultation.

The periodical occurrence of symptoms was observed in 43 out of 46 cases, no matter whether they were located at the pylorus or in the body of the stomach, this being contrary to the opinion of Moynihan, who claims that the periodicity is one of the most important characteristics of duodenal ulceration. I have seen the alternation of painful period with complete absence of symptoms in two cases of ulceration of the lesser curvature, and in one case in which a scar was found in the fundus along the greater curvature.

Periodicity of symptoms can manifest itself in other pathological conditions of the stomach, especially in cases of atony with general enteroptosis. While these cases are easily distinguished from ulceration a differential diagnosis of chronic appendicitis with periodical symptoms may be surrounded by a great many difficulties. Under these conditions appendicitis produces the symptoms of hyperacidity which during the attacks combines itself with pylorospasm. If the vomitus is mixed with blood as I have seen it in two cases the differential diagnosis becomes almost impossible. However, in both these cases complete recovery followed the removal of the appendix.

Hunger-pain was present in 41 cases out of 46. Twice it was missed in duodenal ulceration operated on account of obstructive symptoms. One was a case of several years' standing, and in the other one the disease revealed itself outside of some vague dyspeptic symptoms of short duration by a big hemorrhage through the bowels and tonic contractions of the antrum, which could be seen on inspection. Operation revealed ulceration of the duodenum adjoining the pylorus.

Hunger-pain was present in two cases of gastric hyperacidity without ulceration and very little reliance can be placed on it unless it is combined with a number of other characteristic signs.

Hæmatemesis or passing of blood through the

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stools is the most frequent symptom of ulceration. I hesitate to make the diagnosis of ulceration without the history or finding of blood in the excretions. Out of 46 cases it was found in 36; amongst the negative cases are several in which the observation was not sufficiently extensive, as operation had to be hurried.

The differentiation of gastric and duodenal ulceration has often been based on the way in which the blood was excreted. Exclusively gastric hemorrhage was said to correspond to gastric origin, blood in the stools to a duodenal source. My evidence does not corroborate this opinion. Several years ago a case was observed in which two big intestinal hemorrhages took place, while on repeated examinations the stomach contents were free from blood. The diagnosis of gastric ulceration was nevertheless made, on account of the disappearance of pain on change of position, a symptom which if constant I consider pathognomic of gastric ulceration.

Bleeding from the stomach and especially hæmatemesis are by no means characteristic of ulceration. For some time Moynihan pointed out a group of cases, in which the lesion at the operation is found at the appendix and not in the stomach. Outside of small hemorrhages which follow very frequently the introduction of the stomach tube, I have seen two cases of repeated hemorrhages in which operation failed to show any lesion.

One case seen repeatedly in consultation was very typical. A lady 37 years of age had a number of hemorrhages within the last six years combined with symptoms of hyperacidity. She was first seen after several hemorrhages occurring within three days had reduced her hemoglobin to 18%. Under Lenhart's treatment the patient recovered; six months afterwards laparotomy failed to show any lesion; a gastroenterostomy was performed without any benefit to the patient; the symptoms remained unchanged and the hemorrhages recurred.

Hale White has described a number of these cases and considered them as due to vicarious menstruation, an opinion which I cannot share.

Hemorrhage due to high blood pressure can easily be differentiated from ulceration by the absence of any gastric symptoms, or any radiographic signs and the positive findings in the cardiorenal system.

Hemorrhage due to Banti's disease or cirrhotic changes in the liver should be recognized by the physical signs, revealed by a careful examination of the liver, spleen and blood.

The hemorrhage very seldom endangers the life of the patient; amongst all the cases I have seen only one died from this complication. The case, which is not included in my list, was seen in the country far away from a place where surgical intervention could be carried out. In this case the hemorrhage occurred in an ulcer which had led to an almost complete obstruction of the pylorus. I am quite sure that death was due to this complication as the stomach could not be set at complete rest. In this case an early gastroenterostomy would have saved the patient's life.

Hypersecretion is one of the most important signs of ulceration, not the hyperacidity as we read in so many text books. It may be diagnosed, if we obtain after an Ewald's breakfast more than 120 cc. of the fluid with an acidity above 80. While seen in a great many cases of gastric ulceration its occurrence can be noted in almost every case of pyloric ulceration; in a series of cases published by Kemp it occurred in 95% of the pyloric cases and only 23% of the gastric ulcerations.

Continuous hypersecretion formerly called Reichmann's disease is undoubtedly in the great majority of cases an indication of a pyloric ulceration. All the cases I have seen were due to an ulceration, although a number of cases are reported in which no lesion could be detected around the pylorus.

Inability of the stomach to empty itself within six hours or motor insufficiency of the first degree is one of the most constant symptoms of pyloric ulcerations. While occasionally met with in gastric ulcer it is almost a constant sign in pyloric lesions. While in my series of cases strict attention to this point was only paid within the last year, I have been able to demonstrate its presence in not less than 18 cases. The combination of motor insufficiency with hypersecretion is a very frequent combination in cases of pyloric ulceration and should be considered as a very definite and important step in reaching a diagnosis.

In a number of pyloric ulcerations we can observe attacks, during which every particle of food is vomited. With the food large amounts of fluid are vomited, which in a great majority of cases can be identified as pure stomach juice. If feeding is completely stopped the vomiting continues for a number of days, during which pure gastric juice is vomited in large amounts. These attacks of pylorospasm occur in the great majority of pyloric ulcerations; a typical history of vomiting large amounts of clear fluid during the night or early in the morning is one of the most constant features of a well taken anamnesis. Pylorospasm interferes very frequently with the course of the treatment; if in cases complaining of pressure and distress during the course of the treatment one introduces a stomach tube, large amounts of clear fluid intermixed with food taken on the day previous may be obtained.

Pylorospasm is very often detected by the X-ray examination of the patient; delay in emptying of the stomach from six to 24 hours notwithstanding a strong peristalsis are frequently met with. Pylorospasm is one of the most frequent symptoms of pyloric ulceration, but by no means pathognomic. It is occasionally met with in gastric ulceration, frequently in cholelithiasis. The most pronounced case was seen in chronic appendicitis in which the vomiting of gastric juice continued for four days notwithstanding exclusive rectal feeding. Operation revealed a normal stomach, and an old obliterated appendix. Appendectomy led to complete recovery.

In a great many cases the retraction of the ulcer leads to chronic obstruction characterized by

constant retention of food over night and visible peristalsis. It occurred three times in my cases, all three were operated on, two with excellent results. One developed shortly afterwards a carcinoma on his old ulceration and died six months after his gastroenterostomy. It is in these cases that surgery obtains excellent results, from which it claims the right to deal with ulceration by surgical means, but overlooks the point that only obstruction and not the ulceration is dealt with.

Very little reliance can be placed on pressure points. Wrong localizations are frequently made and easily understood, if one accepts Head-Mackenzie's explanation of referred pain. Too much reliance on this point can lead to grave diagnostic errors as in the following case:

Mr. P., while traveling on a train on the first of February was seized with a gastric hemorrhage; he came under my care after a few days, and was put on the Lenzhartz treatment. He failed to improve; a pressure point to the right of the umbilicus became more and more marked, spontaneous pain localized at this place and finally the abdominal wall became edematous. An operation performed at this time followed shortly afterwards by a post-mortem (the patient having died of an acute dilatation) showed a completely cicatrized ulceration of the duodenum.

The complications of ulcers can easily be diagnosed as long as the presence of an ulcerative process is established.

I have had two cases of acute perforation of a duodenal ulcer operated on. In both cases the diagnosis was easy as the combination of a typical history with the symptoms of a perforative peritonitis pointed the way. One of the patients recovered, the other one, a man of 73 years, died of heart failure on the third day.

Slow perforation of an ulcer was seen in three cases; one, in which the perforation of a pyloric ulcer had led to formation of an air-containing subphrenic abscess, died a few hours after he had been seen; in another case in which the ulcer had not produced any typical symptom, fever persisted for several weeks until an acute perforation forced surgical treatment on the case; he died about 10 days after the intervention, of sepsis. A third case, in which the perforation had probably taken place into the pancreas, was treated conservatively and has been free from symptoms for the last two years.

A rare complication was seen in one case; a woman of 55 years, who had presented the symptoms of a gastric ulcer, was suddenly taken with a chill, fever, leukocytosis and tenderness over the epigastrium persisting for several days. At operation a phlegmon of the stomach was found and a resection of the stomach attempted, but the sutures did not hold in the inflamed tissue, the gastric juice escaped into the peritoneal cavity, digested one of the large blood vessels and the patient finally died of hemorrhage.

The combination of ulcer duodeni with tetany was seen in one case; at the time of the observation she had symptoms of pylorospasm combined with typical tetanic seizures. Operation was advised and will be carried out very shortly.

The transformation of an ulcer into a carcinoma was observed three times. In one case a typical carcinoma was found to have originated from an old ulcer, in two other cases gastroenterostomy had been performed for two typical ulcer tumors at the pylorus; glands resected at the operation failed to show any sign of malignancy. In both cases carcinoma began to develop some months afterwards and both succumbed very shortly.

From my observation I am inclined to believe that the dangers of a malignant degeneration of an ulcer have been very much overrated.

The differentiation of ulcer from carcinoma of the stomach does not present very great difficulties in the vast majority of cases, but under certain conditions, especially if an ulcer-tumor can be palpated, the diagnosis meets with unsurmountable difficulties. Under these conditions I rely most on the almost constant presence of occult blood in carcinoma, whilst in an ulcer it occurs only periodically. The constant appearance of a gramm-positive flora in the stools is strong evidence in favor of a carcinoma, but in most of the cases the differentiation has to be carried out by means of an X-ray examination.

Looking over the clinical picture of ulceration one cannot help being impressed by the similarity of certain phases with the symptom-complex presented by other inflammatory lesions of the abdomen. Very frequently such a focus causes symptoms entirely localized in the stomach with a perfect mimicry of ulceration. Hyperacidity, hunger-pain, pylorospasm and even hemorrhage are frequently the expression of an inflamed appendix or an infected gall-bladder. Removal of the focus of infection is followed by complete recovery.

The similarity of symptoms in my opinion points to a similar pathology. There cannot be any question that in such attacks the foundation for an ulceration is laid. We have come to look upon ulcer of the stomach as a secondary disease (*Sweite Krankheit*, as Roessle expresses it). An irritation set up somewhere, most frequently in the appendix and in the gall ducts, leads to a localized spasm in the stomach wall. This spasm is brought on by the irritation of the autonomic nervous system; as a matter of fact almost every case of ulceration presents the stigmata of a hypersensitive vegetative nervous system as shown by v. Bergmann and his pupils. This spasm, frequently seen during the X-ray examination, leads to local ischemia by the compression of the blood vessels. The anemic area in the mucosa is attacked by the stomach juice and digested; in this way an ulceration takes its origin and finally becomes a chronic ulcer.

This theory makes us understand why the lesions of ulcer are so hard to heal. When after resection of an ulcer another defect originates in the same locality, when after intermissions of six to eight years without any symptom the signs of ulcer return, we can be sure that the same cause has led to a new localization of the old affection.

It is clear that neither surgical nor medical treatment can be fully successful, as long as they treat only the result and not the cause of the disease. In which way medicine and surgery is going to make use of the new facts in the pathogenesis of ulceration, we hope to hear in the following papers.

THREE CASES WITH RELAXED PELVIC SUPPORTS.*

By REXWALD BROWN, M. D., Santa Barbara.

Case I. Mrs. B., age 64. Has had two children with severe lacerations each time. Periods ceased at 50. During the past three years, and particularly during the last eight months, her existence has been miserable. A gradually increasing descensus of the uterus and rectum has practically incapacitated her. Walking has been almost impossible. Examination found the uterus entirely below the vulvar orifice and five inches of the rectum greatly congested, protruding through the anus. The following operation was done: Through a rectus incision the uterus and rectum were lifted into the abdomen and placed parallel to each other. By a double row of interrupted sutures the rectum was firmly sewed to the posterior wall of the uterus. The uterus was then sewed into the peritoneum and muscles of the abdominal wall. The patient's condition at the conclusion of these procedures not being good, further work as had been intended, approximation of the levator ani muscles was not done. Two years after the operation the patient reported that there had been no return of the rectal prolapse, but that the uterus was again appearing at the vulva. She stated she was able to be about and engage in considerable housework.

Cases of prolapse of the rectum are deplorable—with prolapse of the uterus doubly so. They follow a complete loss of tone in all the pelvic supporting structures, induced primarily, as a rule, by a lacerated perineum.

A repair of the perineum alone will not remedy the condition. The cases are not frequent, and a technic must be evolved to meet each case. In the above the procedures outlined served most satisfactorily and could the perineum have been repaired the result would have been well nigh perfect, as the perineum would have prevented materially the continuous heavy drag of the uterus on the abdominal wall.

Case II. Mrs. S., age 51. Referred by Dr. L. E. Heiges of Lompoc. A sister died of carcinoma of breast. Patient's periods began at 13 and were regular up to 2 years ago. Each period lasted 6 to 7 days. Patient had two children. At age of 49 periods began to increase in length of flow, each period lasting 10 to 12 days. Ten months previous to date of this history had, between periods, a sudden severe vaginal hemorrhage. For three months following there was a daily painless bloody discharge. Flow then ceased for two weeks, recommenced and has been continuous since. Three months ago the flow was excessive and patient lost rapidly in strength and weight. For past half year each time bowels have moved a large mass has protruded from vagina and flow has increased. Examination revealed a prolapsus uteri of 3rd degree with a fibroid size of large orange protruding from cervix. There was no evidence of carcinomatous degeneration. The perineum was entirely relaxed. At operation the fibroid was removed through the vagina, the pedicle being detached from the internal os. A Tait perineorrhaphy was done to restore somewhat the perineal floor and narrow the vagina. The abdomen was then opened and the Murphy operation for proidentia uteri performed. Convalescence was uncomplicated and now eight months later the patient is in excellent health with no return of the prolapsus.

In this case it was readily seen that a perineor-

rhapsy would not correct the descensus of the uterus. There was also a descensus of the bladder. As it has been demonstrated so often that hysterectomies and abdominal fixations of the uterus have not achieved entirely satisfactory results in prolapsus cases the success of Dr. Murphy's technic in these conditions suggested its use.

The object of the operation is to lift up the whole pelvic floor and hold it permanently. In brief the steps are: the uterus is brought up until the cervicocorporeal portion is in view—the round and broad ligaments are clamped down to the junction and cut free from the uterus; the stumps are ligated and the lips sewed to cervicocorporeal junction—body of uterus is then free above the recti muscles: The peritoneum is closed about the junction—the uterus is split in the long axis through the middle to the junction and opened out laterally; the mucosa is then entirely cut away—the two lateral parts of muscularis are then securely sewed to the aponeurosis of the recti muscles. It is impossible for the uterus to return to the abdomen.

Case III. Miss W., age 38. Mother died of carcinoma of stomach. Patient's periods have always been regular, each of five days' duration and painless. There has been no increase in flow in recent months. Patient complains of falling of the womb which has been present for several years. She states she is excessively nervous and has most severe and depressing headaches which are worse just before periods. Examination found the pelvis blocked with a large nodular mass, the cervix being pushed down almost to vulva. A supravaginal hysterectomy was done, a very large uterus containing multiple intramural fibroids being removed. The round ligaments which were long and thin were carefully sutured over and into the cervical stump.

This case has been a discouraging one to patient and doctor. Although the operation was performed for an entirely different condition than a prolapsus, prolapsus conditions were present, i. e., relaxation of round and broad ligaments. This case, as will presently be noted, exemplifies, as one instance, the uselessness of supravaginal amputation of the uterus as a radical cure for prolapsus uteri of advanced degree, even though the perineum be repaired conjointly. In this case the perineum was intact.

When the round and broad ligaments have become stretched beyond their power to recover their normal tone, it is asking too much to expect them to support the bladder and rectum, though they are freed of the drag of the uterus.

To continue with the history: Three months after the operation patient returned complaining that during past two weeks she had noticed lump in vagina, which annoys her when walking. Examination revealed cervix presenting at vulva and a complete relaxation of vagina vault. Bladder was in descensus. The abdomen was again opened, the round ligaments, practically unrecognizable, overlapped and sutured into cervix, the broad ligaments plicated over the cervix and the cervix sewed into the muscles of the abdominal wall by heavy catgut. Four months later the patient's condition was as bad as before operation. One year after the second operation I operated upon her again for an acute intestinal strangulation in the upper ileum due to adhesions of undiscovered cause. The pelvis was free of adhesions. The prolapsed cervix, greatly atrophied, was once more fixed into the abdominal wall with heavy silk. It is now nine months since the last operation and the vaginal vault with the little cervical knob at the inverted apex is again coming down.

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NOVOCAIN POISONING.

By R. B. GIFFEN, D. D. S., and F. F. GUNDRUM, M. D., Sacramento.

For some thirty or forty years after the introduction of general anesthesia local anesthetics were unknown to the medical and dental professions. In about 1875, however, the powerful effect of cocain in producing analgesia after application to a special portion of the body became known and this drug began to be widely used for minor surgical and for dental operations, where general anesthesia was unnecessary or inadvisable. It was soon found, however, that this drug was far from ideal because of the not infrequent instances of alarming poisoning and occasional deaths¹ following its use. Pharmacologists therefore exerted themselves to produce some modification of or substitute for cocain which would have the anesthetic properties without its toxicity. A host of such local anesthetics have appeared upon the field: stovain, eucain, beta-eucain, alypin, novocain, quinin and urea hydrochlorid and others.

"Novocain"² (1—para, amino, benzoyl; 2—diethyl, amino, ethane, hydrochlorid) manufactured by Farbwerke, vorm. Meister, Lucius and Bruening, Höchst A. M. Germany, has been one of the most widely used, particularly by the dental profession. The popularity of this drug has depended upon its ready solubility in water (equal weights); its stability to heat (boiling); its activity as a local anesthetic; and its relatively low toxicity. The action of novocain in producing anesthesia is apt to be a little short lived. To overcome this various investigators have combined with novocain some other drug. It was early found that the addition of a few drops of 1/1000 adrenalin solution increased the duration of the analgesia, presumably through the contraction of the arterioles of the local field. Petrow³ showed that the toxicity of novocain for rabbits was markedly decreased by this addition of adrenalin solutions. Löwen⁴ succeeded in heightening the activity of novocain by adding to its solution sodium chlorid and sodium bicarbonate. Hoffman and Kochman⁵ by adding potassium sulphate to the solution for injection increase the dilution without diminishing the anesthetic activity.

There is practical unanimity of opinion concerning the activity of novocain as a local anesthetic among the surgeons and dental operators. Schmidt,⁶ Reithmüller,⁷ Danielson,⁸ Chaput,⁹ Gross,¹⁰ Part¹¹ and Heinke and Lowen¹² all attest the effectiveness of novocain in producing satisfactory local anesthesia when used under a wide variety of circumstances in animal experimentation, minor surgery, dental surgery and intraspinal injection for major surgery. The toxicity of this drug has been found to be uniformly very low when compared to that of cocain. Upon animals Schley¹³ found that 50 min. of a 4% solution did not kill a 515 gram guinea pig. Biberfeld¹⁴ found 0.25 gm. per kg. of dog was not fatal. Chaput¹⁵ used as high as 0.7 gm. clinically without toxic effect. Liebl¹⁶ experimenting upon himself used 0.4 gm. without dangerous symptoms.

Other authors report very considerable amounts injected hypodermically. Struthers¹⁷ 6 dr. of 1% solution; Prinz¹⁸ "3 gr."; Braun¹⁹ 0.25 gm. without appreciable toxic effect. There have, however, been occasional instances of symptoms occurring after injection of novocain. Some of these have been attributed to an "adrenalin effect" and others to hysteria brought on by the stimulation of the novocain injection. Fischer²⁰ after citing three instances of hysterical outbreak expresses his opinion "That for cases which are termed intoxications from novocain with great probability other causes, such as hysteria, are to be held responsible." Gooding and Etheridge,²² after a careful review of the circumstances surrounding the patient described in their article, conclude that the phenomena described were hysterical and not really toxic by novocain.

Occasional instances of what seem to be true novocain intoxication do occur. Fischer²¹ in a later publication describes a condition of relative unconsciousness following an injection of 3 cc. of a 1.5% novocain solution with three drops of a synthetic suprarenin 1/1000 solution. "Patient was in a hypnotic dream; followed instructions, rinsed, opened and closed mouth without being conscious of what she was doing. Recovered consciousness 20 minutes after injection upon the extraction of two roots. Did not know what had happened. No other toxic phenomena present." A second instance of poisoning cited by the same author, followed the injection of 2 cc. of novocain solution of unknown strength. The patient, a woman, had just recovered from influenza. One minute after injection, difficult respiration, cyanosis, dilated pupils and coma. Respiration ceased, artificial respiration for a few minutes brought about recovery. This author, although describing the two instances of intoxication described above, concludes as follows: "Barring a few disagreeable accidents, no serious harm to the organism has ever been reported after the application of the above specified novocain-suprarenin solution, i. e., novocain 1.5, sodium chlorid 0.92, thymol 0.02, aqua 100." Surely an optimistic conclusion after the case recited just above. Marshall²³ reports an instance of "unpleasant symptoms after novocain," the victim being himself. He received three injections at one sitting amounting altogether to 2 gr. of novocain with 1/250 gr. of adrenalin. No unpleasant symptoms occurred until several hours later. The patient noticed malaise upon going to bed. The following morning while walking, the patient was seized by a feeling of constriction in the region of the heart, dyspnea with elevation of pulse rate necessitating rest for several minutes. Jassenetsky²⁴ and Kredel²⁵ report cases of temporary blindness following injections of 8 to 10 cc. of 1/2% novocain solution into the orbit, while doing minor surgery in that neighborhood. Kredel thinks that the blindness was due to an arterial ischemia and blames the adrenalin for the mishap. Both cases cleared up, the latter within three or four hours, the former upon the following day.

Our own interest in possible sequels to injec-

tion of novocain dates from August, 1912, when the following came under our observation:

Mrs. A., American, aet 25. Family history, negative for nervous diseases. Personal history: No serious diseases, no nervous affections, no recent severe mental or physical strain; bodily functions apparently all normal.

Present illness: Upon August 7, 1912, patient appeared at the office to have some dental work done upon the lower incisors. The whole group of incisors seemed especially tender and to relieve pain during excavation an injection of novocain, gr. 1/3 with adrenalin (synthetic) gr. 1/200, was given into the peri-dental membrane around the lateral incisor and cuspid. The patient felt a "quickenings of the heart as though frightened" within a few minutes after receiving the injection, with some numbness of the mouth and limbs. The heart symptoms rapidly disappeared and the patient went through a sitting of an hour and a half without any pain at all from the excavation and preparation of the cavities. Felt slight numbness of the mouth and limbs on following day, but said nothing about these sensations when she came back for a second sitting. The teeth were considerably less sensitive than upon the previous day, but as there was still some pain, a hypodermic containing a similar dose as that given upon the previous day was prepared. The injection was begun in the same area. After about one-fourth of the solution had been injected (i. e., novocain gr. 1/12, adrenalin gr. 1/800) the patient complained of weakness, palpitation and "as though frightened." The needle was at once withdrawn. Within a few minutes, however, patient felt markedly drowsy, but was easily roused, unable to move or rise from dental chair. At this time she was fully conscious, not frightened; said "felt silly about the affair." Pulse rate was 90, volume very good; blood pressure 140 systolic. The heart dullness was not increased, sounds clear. After a few minutes' rest and a small dose of strychnia, we were able to take her home in a machine. On the following day she presented the following:

Her sleep had been much broken, no pain, merely restlessness. General physical examination revealed nothing remarkable. There was marked dullness of perception of touch, temperature and pain over feet, legs, thighs and hands and forearms, less marked upon trunk. Motor responses (voluntary) less affected than sensory, but some weakness in legs and arms. All the teeth of the left lower jaw were quite anesthetic. Muscle sense seems least disturbed. This condition persisted, gradually becoming less severe, for five days, the nocturnal restlessness being the most distressing. Upon beginning to walk after a few days in bed, there was a slight dragging of the left foot. August 16th, one week after the second injection, all objective evidence of the trouble had disappeared, although she still complained of a weak feeling in the left foot.

The account of one further instance of poisoning was kindly sent us by R. R. Sibley, D. D. S. of San Mateo, whose account, together with that of W. C. Baker, M. D. who saw this patient with him, is given herewith:

Dr. Sibley says: "I injected between the upper right central and lateral incisors about 1/6 gr. novocain for the preparation of the cavity in the central (incisor). Patient seemed normal until I was half through inserting the filling, when I noticed she was drowsy, but would rouse when spoken to. After the filling was completed, which took about one hour and a half in all, the patient walked to the dressing-room to prepare herself for leaving. She sat down, placing her head on her arm on the table. I roused her and gave her a drink of whisky. This had no effect, so I telephoned for the physician after placing the patient

in a reclining position. Patient was in my office from 1:30 to 8 p. m., and was pretty 'groggy' when she left."

Dr. Baker's note was as follows: "Miss W., a young woman about 20, medium size, complexion dark and good color. I find her almost unconscious, nervous and irritable; handling her will bring on slight shiver, almost a convulsion. Pupils equal, dilated, reaction good; pulse weak, irregular, small and very slow at times. Slow sighing respiration when aroused, a feeling of tightness through the chest. Marked nervous irritability; consciousness slowly returned after hypo of strychnine and nitro-glycerine. Full dose of aromatic spirits of ammonia seemed to improve the condition very much. The toxic condition is very similar to cocaine in overdose and yielded to the antidotes for it."

Toxic manifestations from novocain injections seem to be quite rare. A rather extensive review of the dental and medical literature for the past few years brings to light scarcely half a dozen instances. Of course, many minor evidences of poisoning may escape notice and some more serious ones fail to be recorded. Upon inquiry among a rather large dental acquaintance no one had ever seen any alarming symptoms except occasionally a little "palpitation of the heart" "due to the adrenalin." That occasional poisoning does occur seems certain. The very slow return to normal in our own case seemed to us a most interesting phenomenon, not usually recorded as being a symptom of intoxication with cocain or its related anesthetics.

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THE FUNCTION OF THE GENERAL PRACTITIONER IN RELATION TO THE STUDY AND PREVENTION OF NERVOUS AND MENTAL DISEASE.*

By HAROLD W. WRIGHT, M. D., Santa Barbara.

This being pre-eminently the age of the prevention of evil, physical, mental, moral, and social, we are all concerned in the campaign with an ever deepening sense of responsibility, as our knowledge of the causes of disease increases.

There is no department of human activity which the physician, if he be true to his calling, can conscientiously ignore, for his work deals with man as a whole and the reactions of environment in all its phases upon man. But in our zeal to do something great, to take part in some big movement, to prevent disease in an wholesale manner—we are quite apt to overlook details in the individual case—because of our concern for society as a whole. But society is made up of individuals; like the human body, society is an organism and if one member suffers, all, or at least some, other members suffer with it.

In these days of specialism and specialists, when medical men seem more interested in the "case" from a purely scientific viewpoint than in the patient as an organism there is apt to be a great deal too much shifting of responsibility by one specialist to the shoulders of another and too much disregard of anything outside one's particular field of endeavor; and consequently many important conditions are overlooked and uncorrelated, conditions which have much to do with the future of our patient from more than one point of view.

Now what are the most important individual problems confronting the general practitioner which have a direct bearing upon the prevention of future disease of the central nervous system, both organic and functional? Naturally the answer is, they are those seen in connection with infancy and childhood and in connection with the critical period of adolescence, and it is the family doctor who meets

them first and most often. He, alone, has the advantage of prolonged association, for he may follow the patient from birth through a long life to the grave, if given the chance.

What function has the general practitioner you may ask, in preventing neuropathic or psychopathic disorder? Are not such diseases due chiefly to hereditary factors and therefore problems to be solved by the eugenicist? And again, what can the practical physician do about it and why should he bother himself since he is concerned chiefly with the individual's bodily ills? While it is true that in the majority of individuals who, sooner or later, fall victims to nervous or psychic disease, there is a defect in the germ plasm from which they have developed we must not forget that it is a latent defect and that the circumstances which bring this latent defect into activity are largely controllable—if recognized early. The problem of paramount importance is that of recognizing *early* the latent defect, of determining *early* the type of personality that we are dealing with and its capacity for adapting itself to its environment, and of shaping both its education and environment, physical and psychological, to meet its capacity.

To do this the family doctor must have as great an interest in the psychology of his little patient as in the physical condition. The day has passed when the general practitioner could be excused from interesting himself in psychological matters. Their importance in relation to physical and mental welfare of both children and adults is now all too apparent. Such an interest should be part of the day's work of the doctor as well as a very important part of the education of the medical student.

Gentlemen, it is time to call a halt on the bugbear of heredity, especially in relation to functional nervous and mental disorders (I am not now considering imbecility or feeble mindedness) though even here extrinsic factors may play the only part in causation. A bad heredity is bad enough to be sure, but nature, sooner or later, takes care of it and in a way beneficial to the race. Moreover, it is too complex a subject for even the expert eugenicist to lay down absolute formulae about or to make laws about marriage which will inevitably work well. Furthermore, when the hereditary aspect of disease looms large in our minds we become incurable pessimists and lose sight of the early post-natal causes, the influences of traumatism during birth, of mal-nutrition in utero and early infancy, and the morbid impressions due to faulty environment and education, especially the education or lack of it given in the home from birth to adolescence as they affect the predisposition to nervous and mental disease. There are always causes for nervous or mental breakdown other than hereditary, and indeed, more often than not, no hereditary taint can be demonstrated. Many things are said to be inherited which would be more correctly termed "early acquired" or "congenital," for example—congenital syphilis also is responsible for numerous cases of feeble-mindedness, epilepsy and even paresis as

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early as six years of age, to say nothing of its effect upon general development. It may be prevented by treatment of the suspected mother during early months of pregnancy, and its effects may surely be forestalled by proper treatment of the infant until we *know* that it is cured. I wonder how often this disease is overlooked by the general practitioner and how thoroughly followed up the treatment is. We have now a reliable test in the Wassermann reaction and in salvarsan, a surer remedy than ever we have had, but often we do not avail ourselves of the former and give the latter in a desultory half-hearted manner. Heroic treatment of congenital syphilis and of acquired syphilis and eternal vigilance to be positive that we have cured it is the only treatment worthy of the name. Syphilis is responsible for about 25% of the mental cases admitted to the State Hospitals of New York State and I dare say that the same would hold true of all other states. Many of these cases are due to acquired syphilis in youth and to prevent these we need to emphasize the importance of education in matters of sexual hygiene to the young men and women of our high schools and colleges. Two other very important factors in causing a predisposition to nervous diseases and the neuropathic constitution are malnutrition during early infancy and defects of development of the glands of internal secretion, especially of the thyroid and pituitary. As yet, we know but little about these latter and the metabolic conditions dependent upon them but they offer a most interesting problem for research, not only in the laboratory but as much or more so, in clinical practice; defects of internal secretion should ever be in the mind of physicians at all times when confronted with any disease of the nervous system and a careful record kept of symptoms for future comparison with the experience of others.

But with regard to nutrition we have already well founded knowledge to work upon and we are not afraid to declare that every infant has the right to good mother's milk and that it is nothing short of a crime to deny it. Many children are denied this blessing because it is not insisted on by the family physician and too many bottle fed babies are fed injudiciously and carelessly because the matter is left to the uneducated judgment of the mother, or grandmother. There is no greater or more interesting problem in preventive medicine than that of the nutrition of infants and young children. If their nutrition has been all that it should have been little fear need arise for their gastric, pulmonary or cerebral welfare in later years. It is in the period of infancy, when the growth of all the tissues, but especially that of the nervous system, is most rapid, that improper or insufficient food plays most havoc.

Rickets is responsible for more neuropathic constitutions than we realize, for let us remember that rickets is a disease of all connective tissue, not only of the bones but also of muscles, blood vessels, lymph channels and white matter of the central nervous system. (Hence the spasmophilia of rachitic children.) Small hearts and flabby hearts, small blood vessels of feeble tone

and hence defective growth of the entire body may be traced to this disease or an allied disorder of nutrition and find frequent illustration in the under-sized, anemic and neurotic children seen in our schools. Indeed this disorder may well be held responsible for the neurotic constitution which later in life manifests itself in hysteria and manic depressive insanity, or neurasthenia. For such a constitution the ordinary troubles of life are too great a burden. Another similar condition seen later in childhood but apt to be overlooked is secondary anemia due to chronic intestinal indigestion and chronic malnutrition. Such cases are observed soon after the age when the child's diet is no longer considered a specialty and the age of three to twelve years is one in which parents are too apt to let children eat what they take a fancy for and without regularity. Victims of chronic intestinal indigestion are illustrated by the pale, sallow feverish child with capricious appetite, constipated at times, at other times suffering from headaches, lassitude, cold extremities and disturbances of sleep, i. e., night terrors, also from facial tic, habit, spasms, even convulsions, and always general unhappiness and irritability, all or any of which prevent the child from meeting the exactions of school life and other social responsibilities, thus causing depression of spirit and perhaps laying the foundation for dementia or at least hypochondriacal tendencies and neurasthenic symptoms which crop out at adolescence or later, when the responsibilities of life increase without a proportionate increase in nervous energy. It is from such that the sexually abnormal or perverted are recruited.

(The subject of dietetics has been greatly neglected by our profession and by our public schools. It should be adequately taught in the school curriculum. Physical culture is taught in a practical manner but of what use is physical training to those who have no foundation material to train because they are badly fed! In our cities many a child goes to school on a breakfast of coffee and bread and rushes home at noon to partake of a luncheon of similar caloric and proteid value or buys it at a bakery. May not much of the mental retardation found in public school children be due to this? And have physicians no responsibility, private and public, in connection with such conditions?)

What are we, as physicians, doing to bring about more efficient instruction in dietetics in the home and the school as well as in our medical schools?

There are, of course, still other physical factors which predispose to mental breakdown or cause actual cerebral lesions, viz., the infectious diseases—typhoid, scarlet fever, polioencephalitis and, in adults, alcoholism and syphilis, but these causes are more particularly related to the problems of public health, sanitation and hygiene, rather than to individual factors. Just a word as to alcoholism and drug habits. These are more often a symptom of a neuropathic or psychopathic temperament than a cause thereof and the mere giving up of alcohol or other drugs is not sufficient to bring

about the cure of the patient. The physician should seek deeper for the underlying mental attitude and the factors in the environment which have brought about the habit.

So far we have been speaking entirely of physical causes. With regard to psychological factors in the causation of the neurotic constitution and of actual insanity, there opens a large field for investigation, not only by the psychologist, but also, a field well worth the interest and study of the family physician. It is a field but poorly tilled as yet. The more we learn, however, about these psychological causes the more we can do to prevent mental disorder from progressing to the actually insane stage. The general practitioner is in a position to bring the patient under the guidance of those trained in psychopathology before the patient has reached the stage where commitment to an asylum is imperative. (Many such commitments could be avoided if our general hospitals and dispensaries were equipped with psychopathic departments.)

The only way to be adequately informed as to these early causes and symptoms is to study each individual case by itself, as a clinical entity, rather than as one of a group, to delve into the biography of the patient deeply enough to arrive at the root of the morbidity. The roots of morbid personality reach down through adolescence into early childhood and even infancy. They are acquisitions from the environment with all that broad term comprises. When we have excluded physiological influences such as have been indicated above, the majority of which, by the way, are predisposing but not actual causes of nervous and mental diseases, we are only half way on the road of our investigation and ready for the discovery of what is still more important—the effects of psychic traumatism. Traumatism to the delicate but ever expanding mind and soul of the child. This is not a fully formed thing at birth or at any time but a constantly changing personality ever seeking free expression of itself in reaction to its environment, ever changing in its effort to adjust itself to circumstances and reconcile them with inherent tendencies. The foundation for the functional psychoses is laid in the early plastic period of the child's development. Tendencies to melancholia, hypochondria, mania, the phantasies of dementia or the delusion of paranoia, tendencies to irritability, easy discouragement, unsociability, and lack of zest in living, no matter how late in life they occur, have their origin in morbid impressions made upon the mind of childhood or upon faulty education of the child. They begin in the home as do the antidotes to such tendencies. It is natural for children to have sunny and courageous dispositions; if they are otherwise something unnatural has entered into their early environment. Many published autobiographies in general literature reveal this, many more autobiographies from our psychopathic patients, could they be fully obtained, would throw floods of light upon the causes of functional psychoses and neuroses and so indicate to the parents of the future what they might do to prevent the development of morbid personality

in those so predisposed by reason of a weak nervous system.

We consider it criminal negligence to deliberately expose children to the dangers of the infectious diseases and is it not just as criminal or negligent to let them be exposed to mental disorders? Few are the children who outgrow the impressions made upon them in early childhood—impressions made by confusion and strife, cruelty, physical or mental, by gloom and general unhappiness in the home, nor do they easily, if at all, outgrow the effects of suppression of free development of mind and soul caused by misapplied punishment and needless unwise repression of their activities. And inasmuch as sexuality, or love and general affection, is the fountain head of all energy and the motive power of efficiency, it is especially important that the child's sexual, or in this connection I prefer the word *affectional*, life be considered and developed in a normal and even manner; it is important that precocity of this energy on its physical side be guarded against and when aroused, directed into healthful activity which takes the mind from self. But it is equally important that this energy on its spiritual or mental side be not stunted and repressed but developed and directed in a way to arouse altruism and unselfishness by example rather than precept.

The problem is, therefore, one involving child study particularly, and especially the study of and proper training of the emotional life of the child. This also implies the sexual life. The sexual impulse develops, in some form, very early in life, and it is the sexual impulse even when not consciously sexual which is the motive power of all human energies, strivings, ambitions and accomplishments from early childhood through adolescence to senility, and by careful analysis investigators in mental disorder have discovered that in almost every case of functional nervous or mental disease and especially in the psychosis known as dementia praecox there has been either a faulty development, or a disturbance of the sexual or emotional impulses in early years, even as far back as infancy and childhood when this impulse is normally veiled in the form of general activities and generalized affections and interest. It is, therefore, incumbent upon physicians to be prepared to recognize early the deviation from normal and to formulate instructions, for parents as well as children, in mental hygiene, in a scientific and comprehensive way rather than to let this important matter be taken out of their control by poorly informed laymen. It is from the instructions given by the family physician that the parent, the teacher, and the clergyman must be informed adequately in matters of sexual and mental hygiene and its bearing upon psychopathology in order that each in his or her sphere may be a competent counselor to the child in times of special stress and danger. The disturbance or faulty development of the love impulse may have its root either in precocious excitation of the purely physical channels for its expression or on the other hand in the repression or denial of gratification of it in normal ways because of lack of parental affection and opportunities of

reciprocation and complete confidence and harmony between parents and child. Either condition may lead to seclusiveness in the child, to introspection and secrecy, curiosity about oneself and consequent physical disturbances from self-indulgence, in other words, to introversion and, therefore, perversion of the general affections with which the specifically sexual function is so closely bound. This is the basis for the "shut-in personality" characteristic of every case of dementia praecox and many allied neuroses. Also it may lead to a tendency to a state of vague fear, anxiety, suspicion, gloominess of temperament, and tendency to be easily discouraged—all of which are found later in the adult patient who suffers from cardiac neuroses, hysteria hypochondria and incipient paranoid states of mind which can be traced to ungratified sexual longings. In such the affections have often been too strongly fixed on one parent and when removed from contact with this, the patient falls by the wayside from lack of other interests and affections.

In the bashful, seclusive child who cannot play his part in the social world we have the same mechanism and the same causation, namely, an unwise repression of the child's energies by parents who fail to direct these activities in healthful channels. Aroused energy must have an outlet somewhere, and if not rightly directed in channels for expression according to the child's capacity and interests will return unto itself, unto its source which is fundamentally connected with the development of the sexual organs. In this connection the importance of vocational education of our adolescent school children, education suited to their desires and capacities, must be kept in mind. If such energy involutes it eventually dies, or becomes latent, and the individual fails at the growing period (adolescence) to develop fully; nervous cells, glands of internal secretion and the whole neuro-psychic life become warped from lack of impetus and we have the picture of the typical adolescent form of insanity known as dementia praecox.

But there are many other forms of mental disturbance of a milder degree, neurasthenia, psychasthenia and forms of melancholia, hysteria and mania which have their foundation in faulty adjustment to the environment because of disturbance and lack of application of the emotional faculty and the treatment of these more hopeful disorders is to be found firstly, in psychological analysis of their development so that the patients' makeup and capacities may be clearly understood by them as well as the physician, and secondly, in giving these sufferers what he or she always lacks—a definite opportunity for expressing emotion according to functional capacity, in ways which satisfy the affections. The affections and the ethical and altruistic senses as well as the motor activities which make for creative and productive work of an individual are closely related and the one is a complement of the other. Here is where a healthy moral training becomes an important factor in the prevention of these disorders and a healthful ethical and vocational interest an important means in their treatment. But it must be an interest which makes one give out, rather than

receive, for after all man is not just an animal body but has also a soul, and functional nervous and mental diseases are in a broad sense of the term diseases of the soul or, if you prefer, of the emotions. And when we undertake to treat them we cannot afford to overlook this point. Not only is the patient's mode of reasoning at fault, but more often and to a greater degree, there is something wrong in the deeper regions of the mind where lie the spiritual faculties, and the patient is at odds with his fellows, with himself, and with his God.

There is no harmony in either the inner or the outer life—all is disharmony and chaos. There is no definite aim in life. There is no real love in the heart—and when love is absent there is sure to be either its substitute, hatred, as in the paranoiac, else a morbid love of self, as in the hypochondriac or hysterical, or even a complete vacuum, so far as love of anything goes, as in hebephrenia or melancholia. In other words, there is no zest for anything outside of oneself. The origin of such a condition is in some disturbance, perversion or maladjustment of the emotional life; the individual, if an adult, has failed to find normal satisfaction for the love impulse and its complete fruition in a happy union with the life of another, or else, this denied, to find a compensatory channel for its expression such as a strong intellectual interest or an absorbing work for the sake of someone or something, be it ever so vague. Energy has been shunted off its normal track and found none other; it therefore has involuted instead of evolved. The treatment of such a condition is to be found in moral ideals which will reawaken this primal energy and direct it away from self.

The physician cannot deal with these disorders unless he is either willing to co-operate with the physician of the soul or himself has sufficient insight and faith to recognize that the soul of the patient is in need of treatment. The clergyman on the other hand will need the help of the physician even more in order that an exact diagnosis of the case shall first be made and the causes of the disease made plain.

It is pitiful to see unhappy wives and, sometimes, husbands going to doctor after doctor for the treatment of this, that, or the other vague symptom—for gastric disturbance, insomnia—lack of energy—nervous and mental depression, and given useless drugs or prescribed trips to Europe on which they still carry about the same old self and return again to the same mode of life with the root of the disorder untouched. In such people the neurosis is a symptom of the social disorder prevalent today in all classes of society; if the patient is of the opulent class the disease is often an equivalent of a discontented mind which has failed to find pleasure in the work at hand or to see the relation and importance of that work to the whole social scheme. All thinking persons must have an aim and an ideal in life. What is most needed is something for which one gives oneself, and those who are always trying to get without giving are the most miserable. To be needed and

to realize where one is needed most in the world is the best balance wheel for one's psychology.

As to religious or moral education of children; the day is coming when the broad-minded physician's aid will be more and more sought, for he more than anyone should know the whole man, as an evolving organism with mental and spiritual forces at work in him which are closely related to the physical.

My last word is a plea that the family physician may continue to hold that intimate relation with the patient such as the "doctor of the old school" had, that he may also study and know his patient in all his attributes and that the specialist although he must confine his work to one organ may not be blinded to the greatest organ of all, the mind; and that all of us may see ever more and more clearly our relation to and our responsibility for the education of the children of this and future generations.

THE INDUCTION OF ANESTHESIA AND ETHYL CHLORIDE.

By CARLETON DEDERER, M. D., Los Angeles.

The induction of anesthesia is far more important than its subsequent continuance. One of the leading investigators in the field of anesthesia, George W. Crile,¹ M.D., of Cleveland, has not only laid great stress on the avoidance of fear before operations, but has shown chemically the effect of fear on the central nervous system. He says: "In rabbits subjected to the emotional stimulus of fear alone the brain-cells showed precisely the same change as those which resulted from physical injury, namely, an immediate stage of hyperchromatism and a later stage of chromatolysis; a disturbance of the nucleoplasmic relation and a final disintegration of many cells."

By using ethyl chloride for inducing anesthesia the patient is as free from brain trauma arising from emotional stimuli as by any other method *per se*. The two chief ways of eliminating fear before operations are by drugs and by suggestion. Drugs are not always necessary.

Suggestion should be of a constructive nature. The anesthetist should endeavor to fill the mind of the patient with positive conceptions of the successful outcome of the operation without actually referring to its immediate results. The psychological relationship between the anesthetist and the patient may be divided into three parts: 1, Salutation; 2, Foundation; 3, Construction.

1. The salutation consists chiefly of effecting an introduction of the anesthetist to the patient.

2. The foundation of the psychological relationship should be formed by remarks which take cognizance of present conditions, recognizing them, then finishing their consideration and throwing them out of mind by some remark such as, "I guess you will be glad when this is over." In this period the anesthetist should find out something in which the patient is interested.

3. The period of psychological construction accompanies the beginning of the administration of

the anesthetic. To a certain extent the patient has to turn his attention to everything the anesthetist says. It is advisable for the anesthetist to make some brief remark about the method and object of the anesthesia such as, "This makes you sleep so that you will not feel anything." In rapid succession the anesthetist should change the subject to elaborations of ideas which he thinks can retain the attention of the patient. If the anesthetist constantly furnishes the patient with numerous subjects of thought he will succeed in eliminating much of the fear which is usually experienced by the patient. These subjects may be anything from a merry-go-round to baseball. As a final remark the anesthetist may say, "You will feel fine when you awake."

Ethyl chloride is dispensed in glass tubes. Its flow is controlled by a lever valve. The aperture should be large enough to give a stream which will not cause freezing.

Ethyl chloride is administered on the ordinary drop method inhaler covered by eight layers of light cotton gauze. It is well to hold the tube near the inhaler to prevent unnecessary cooling. One hand should be placed over the inhaler to aid volatilization. The ethyl chloride is squirted on the inhaler for periods of a few seconds alternating with equal periods of intermission. In the case of a four-year-old child, for instance, this procedure is continued for about one minute at which time the intermissions are occupied by the pouring on of ether. The administration of ethyl chloride is gradually diminished after one and one-half minutes but may be continued thus until after the stage of ether excitement is passed. As a rule the physical manifestations of ether excitement may be avoided by continuing the ethyl chloride for three minutes in a child of four years, for five minutes in a child of twelve years, for seven minutes in a woman and for nine minutes in a man. About ten grams of ethyl chloride is used for the induction of anesthesia in a child four years; about fifteen grams is used for a man.

The physiological action of ethyl chloride is similar to that of ether, but about five times as powerful. On this account it should be given always in an open inhaler instead of in a closed bag as originally introduced.

There are several physiological signs which have to be borne in mind. Generally by the end of the first minute a child, for instance, will be entirely unconscious of external stimuli. The respirations will then become more frequent and deeper. This is a signal not to push the administration of ethyl chloride but to start the ether.

The eyes of the patient should not be covered as the corneal reflex and pupillary reflex should be tested at least every half minute in the beginning of the period of unconsciousness. The corneal reflex and of course the pupillary reflex should not be paralyzed by ethyl chloride. The hands of the anesthetist should be clean for testing these. A safe and convenient way to test the corneal reflex is to make the upper eyelashes gently touch the cornea by turning them downward. If present the lid will twitch.

¹ Crile, Geo. W.: Shock, *The Journal A. M. A.*, Dec. 6, 1913, p. 2028.

Ethyl chloride has several advantages: it has a pleasant odor; it takes only a short time to induce anesthesia with it; the vapor does not irritate the respiratory passages. For these reasons and on account of its simplicity of administration it reduces to a minimum injurious emotional stimuli. Patients rarely struggle against ethyl chloride. This is an advantage especially in cases of abdominal or thoracic visceral injury.

After induction by this method the anesthetist may choose the best method for continuance of anesthesia.

HAIR-BALL TUMOR OF THE STOMACH.

By ADOLPH BERG, M. D., San Francisco.

The finding of a hair-ball tumor or trichobezoar in a human being is rare enough to be reported. The death rate is high and in the present case the true condition was overlooked by several physicians in this city and Denver, Colo., after a history of hair eating had been given to them by members of the family. Butterworth, in what is probably the best article written on the subject, hoped in the future to make a diagnosis before operation, but as I have not seen any more reports from him, he should at least be given the credit for suggesting the correct diagnosis.

Hair-ball tumors or bezoars are not uncommon among animals, as "hair-licks" are frequently found in cattle, but the practice of swallowing hair in great amounts in the human race is rare. Bezoars may be formed of hair or vegetable fibers or they may be composed of lime or magnesium phosphate as found in the wild goat of Persia. The latter are called the Oriental bezoars and have been used for their supposed medicinal value.

Mrs. X, age 24 yrs., has gained 20 pounds since her marriage one year ago. No children. No miscarriages. The past 10 years she has suffered from attacks of vomiting and abdominal pain lasting three to five weeks and accompanied by great emaciation. The last attack occurred two years ago. She has enjoyed fairly good health in the interims. She could usually feel a freely movable mass in different parts of the abdomen.

Menorrhagia and metrorrhagia were especially marked in the spells of vomiting.

The most frequent diagnoses have been appendicitis, one or both kidneys movable and uterine fibroids, and various operations were proposed.

Owing to the conflicting diagnoses operation was refused.

March 23rd, 1914. Patient is suffering severe intermittent pains in epigastrium and vomiting. She has not been feeling well and has vomited several times the past three weeks. Palpation of any part of the abdomen causes pain in epigastrium. Muscles of upper abdomen rigid and no mass can be outlined. Uterus small and freely movable. Fetid breath. Tongue coated. Temperature 99.5°. Pulse 120. Leukocytes 11,000. Urine negative. One grain opium suppositories gave only slight relief.

March 24th, 1914, 8 a. m. Severe pains and vomiting. No bowel movements from enemas. No relief from hot bath. 8 p. m. Fairly comfortable day but towards evening vomiting of much frothy mucous and severe pains. Patient very weak. Whole abdomen distended and rigid. Tumor not palpable. Temp. 101.5° F. Pulse 126. Refused to submit to an exploratory operation. Further questioning brought out the suggestion

from the mother "if hair eating could in any way cause the pain?" A positive diagnosis of hair tumor was made and consent was given to operate.

Patient stated that a few years ago she passed, per rectum, a small hair-ball with long strands of hair attached. She has frequently found hair in the vomitus.

The suggestion that hair eating could have anything to do with her illness had been laughed at so much by most of her physicians that no mention was made of it before this time.

She was given a hypodermic of $\frac{1}{4}$ gr. morphine and when she reached the hospital the entire abdomen was relaxed. The lower border of a smooth, hard mass was felt lying transversely high and deep under the left costal arch.

Operation at St. Joseph's Hospital 11 p. m. Dr. Roy H. Morris assistant. Median epigastric incision. A tumor was found lying in or back of the stomach. The mass was with much difficulty dislodged as it was tightly wedged against the esophageal opening. The stomach was somewhat dilated and showed several striae similar to those of pregnancy. The intestines were distended and congested. A vertical incision from the greater to the lesser curvature of the stomach disclosed a very foul smelling yellowish fluid which was swabbed out together with some loose hair. Some difficulty was experienced in keeping the stomach walls against the gauze pads to prevent the fluid entering the peritoneal cavity in the manipulations of removing the hair mass. The mucous membrane was normal in appearance.



A search for intestinal hair-balls was unsuccessful and was greatly interfered with by the intestinal distension. The uterus was small and adnexa normal.

The stomach incision was closed in two layers and reinforced by a serous stitch, using a running plain catgut suture throughout. The abdominal wound was closed with catgut and a few deep silkworm sutures. The next morning the nurse reported finding fine hair particles in the glass of water used for washing the patient's teeth. Only a slight retching followed the operation. Beef tea was given on the second day and solid food on the fourth.

The abdominal wound suppurated in a few days probably due to the breaking down of fat and slight soiling of operative field by stomach contents. The pus was foul smelling like that of a colon infection.

Operative wound was healed and patient left the hospital on the 14th day. She has had several attacks of diarrhea and many small fine hairs have been found in the stools. (May 28th.) She states that the hair eating habit has been cured.

The hair mass is a perfect cast of the stomach with a saucer-like depression at the esophageal end. The mass was smooth but some hair was torn out by the tenaculum in the attempts to deliver it from the stomach. Most of the hair

pulled out show it to consist of lengths of $\frac{1}{2}$ to 1 inch and closely packed to about the hardness of a baseball. Weight in moist condition, 16 ounces. Length 6 inches and circumference at the middle, 9 inches.

Heazlitt reports hair-ball tumors having been found in about 70 cases, 42 of which came to operation, the remainder being found at autopsy. Most of the cases were operated on for other conditions and in only 10, including his own, was the diagnosis made before operation. He removed a hair-ball from the stomach but in a few days he had to perform a second operation at which he removed a hair-ball at the ileo-cecal orifice to which he attributed all of the original symptoms.

The ages of occurrence have been from 8 to 37 years. The weight of hair tumors has reached six and one-half pounds. O'Hara states that about one-half die from perforation.

In J. Knowsley Thornton's case the two-pound hair mass extended well into the duodenum and esophagus and he remarks that if the tumor had remained much longer the diagnosis could easily have been made as it would have presented itself at the mouth.

Excepting two or three cases hair eaters are generally of sound mind, the insane usually swallowing also foreign bodies. The patient of this report was intelligent, but during such periods as hard study in high school, would bite off the ends of her hair and swallow it, more than at other times.

Several have mentioned the vomiting of frothy mucous. The tumor in this patient was wedged so tightly against the cardiac end of the stomach that all the mucous must have been secreted in the esophagus, also the vomiting differed entirely from the foul smelling stomach contents.

Fenwick thinks that small hair concretions are probably not infrequently the cause of obstinate constipation in children, but later as the hair is worn in the adult style the habit of hair eating is discontinued and any concretions are gradually evacuated.

The diagnosis is of some importance for if the tumor is firmly fixed it might easily be mistaken for an inoperable carcinoma unless gastrotomy was done and the stomach explored.

Diagnosis—1 Age and sex. Usually occurs in young females. 2 Duration of complaint. This is seldom less than 10 years. In one case reported by Russell a woman aged 31 years died following an abortion and at autopsy a four and one-half-pound hair tumor was found dragging the stomach into the pelvis. The tumor had been growing 17 years and the patient had enjoyed normal health. 3 Physical characters of tumor. They are smooth and the hardness is striking, and are usually freely movable. 4 History of hair eating. This may be denied, especially in children, through fear. The vomitus and stools should be examined and it may be of some value to also examine the water used for washing the teeth.

The X-ray has been used successfully in making the diagnosis in one case, in which three hair masses

were found in the stomach. In the other case the X-ray, following the administration of bismuth, "showed a beautiful picture of a tumor occupying the whole stomach and extending into the duodenum," but the exact nature of the tumor was not diagnosed before the operation.

I am indebted to Dr. P. H. Mattner for the photograph.

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INTRANASAL OPERATION FOR DACRY-OSTENOSIS, WITH CASE HISTORIES.*

By L. D. GREEN, M. D., San Francisco.

In presenting this subject to you my object is to bring out in discussion the advantages and disadvantages of this method of treatment for the relief of dacryostenosis. In an article published in the CALIFORNIA STATE JOURNAL OF MEDICINE for January, 1914, I have described the procedures as practised at the present time, particularly that of West and Bryan.

The operation consists of making an artificial opening from the lacrimal sac into the nose, as in the majority of cases the stricture is located at the junction of the sac with the duct.

Under cocaine and adrenalin anesthesia the mucous membrane and periosteum of the area immediately in front of the anterior end of the middle turbinate are raised in the form of a quadrilateral flap, with its attachment below and turned down over the inferior turbinate. This will expose the bony nasal wall of the lacrimal fossa. With appropriate chisels or burs the bone is removed till the sac with its membranous attachments is clearly exposed. This is firmly grasped with forceps and a piece from its nasal wall excised. Before the mucous membrane is replaced in position, a piece of the flap at its postero-superior angle is cut away so as to leave the opening into the sac free. The nose is then packed with gauze which is left in place till the following day when it is removed.

The sac is irrigated daily until healing is complete when it will be found that a permanent opening exists and the condition cured.

To prove that drainage is free a $\frac{1}{2}\%$ solution of fluorescein is dropped into the eye. A piece of cotton which has been placed in the nose at the site

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

of the opening should be colored yellow if the secretions pass through freely.

Caldwell, in 1893, called attention to the desirability of preserving the canaliculus, as by its capillary action it causes the tears to flow into the sac. When it is slit this action is destroyed and is apt to interfere with proper drainage. Since doing the intranasal operation I have become convinced, at least to my own satisfaction, of the advisability of leaving the canaliculus intact.

Where drainage is free the patients will sometimes remark that they feel air blowing in their eye when forcibly blowing their nose. This is more pronounced in those cases where the canaliculus has been slit. Usually it is of little importance but in my estimation is a distinct danger and the operation contra-indicated where a cataract or other intraocular operation has to be performed.

In cases where there is a marked deviation of the septum to the side of the stricture, a submucous resection may have to be done before access can be had to the operative field.

The following cases will illustrate the manner in which recovery takes place in those patients where the operation has been successfully performed:

Case 1. Mrs. L. C., age 33. Epiphora of right eye began about Feb., 1911, when patient went to a general practitioner who prescribed drops, but obtained no relief. Three months later felt a lump over region of sac which on being pressed forced out pus.

Then went to specialist who advised removal of sac, but patient refused. In 1912 went to one of the local clinics where the canaliculus was slit but no probes were passed. No benefit resulted. Later went to another clinic where an attempt to pass a number two probe failed on account of stricture being present.

Nov. 13, 1913, was referred to me for operation. On examination I found right lid thickened, conjunctiva inflamed, swelling over region of sac, canaliculus slit. I operated intranasally and on opening sac a large amount of pus exuded. Irrigated daily till Nov. 26th, free drainage being present all the time. Dec. 1st patient discharged, cured. Feb., 1914, four months after operation, drainage is free and patient entirely well.

Case II. Mrs. T. C., age 45. Complains of eyes watering for past six years, during which time much pus was present. Was treated for four or five years with probes but obtained no relief. In June, 1912, came to San Francisco, where treatment with probes was continued after right canaliculus was completely slit and left, partially. No improvement. August 1, 1913, was referred to me. I operated intranasally on left side. Some pus exuded at the time. Aug. 2 very good drainage. Irrigated daily for about a week. Aug. 15, healing complete and condition cured on left side. Aug. 15, operated on right side. Has high deviation of septum to right but patient refused submucous resection so had some difficulty on account of nearness of septum to right lateral wall. Obtained free drainage but for fear of having adhesions form between the septum and operated area, treatment was continued to Nov. 15, longer than usual, when patient was discharged cured. Feb. 3, 1914, drainage free on both sides. No epiphora or other symptoms of dacryostenosis. Fluorecein passes freely through both sides.

Discussion.

Dr. Kiefer, Los Angeles: For how long a time have those operated cases been followed? It would

seem that there would be great danger of closure of the artificial opening into the nose, such as frequently follows operations on the antrum of Highmore.

Also discussed by Dr. Hulen, of San Francisco.

Dr. Green: In answer to Dr. Kiefer's remark that the opening into the sac may close, I must say that this is true if it has not been made large enough. It happened in my first cases, where I did not remove enough tissue. When enough bone and sac has been removed, this will not happen.

SHOCKLESS SURGERY.*

By A. B. COOKE, M. D., Los Angeles.

For many years it has been conceded that the greatest danger of modern surgery consisted in the ever-present possibility of surgical shock. With the epoch-marking discoveries of anesthesia and, later, of antisepsis the chief obstacles disappeared. But it was recognized that there still remained a danger, insidious and menacing, which all too often thwarted the efforts of the most painstaking and skillful operators. To overcome this danger one authority taught that speed in operating was the remedy, another that perfect hemostasis was the great desideratum. And still there constantly occurred and are occurring cases in which life is jeopardized, indeed often sacrificed by the advent of conditions which seem to mock the precautions of the most brilliant clinicians.

The picture is familiar to all. A patient whose general physical condition is excellent, is subjected to an operation in itself not particularly formidable and which is performed with reasonable skill and dispatch. He comes off the table at the end of forty-five minutes or an hour a shaken and battered wreck, with features of a ghastly pallor, drenched with perspiration, pulse rapid and thread-like, respiration shallow and sighing, pupils irregular,—in short, presenting every appearance of impending death and requiring the most intelligent and unflagging attention for hours to stem the ebbing tide of vitality. This is surgical shock. Every surgeon of large experience has seen it time and again, and the aggregate of the anxious hours he has spent because of it would form a large chapter in the record of his professional life.

Since the publication by Dr. Geo. W. Crile in 1897 of the thesis which won the Cartwright prize he has been regarded as the foremost authority upon the subject of shock. After years of patient study and a prodigious amount of experimental investigation he now tells us that he has perfected a system or method by means of which surgery may be practically freed from this great source of danger. Those who know Dr. Crile, his integrity as well as his preeminent ability, can not but listen with respect to any utterance he may make upon the subject.

Anoci-association is the name applied to this new method of shockless surgery. That we may the more readily comprehend the principles in-

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

volved, let us take a brief glance at the theory underlying it.

In his primitive state the two most important problems presented to the ancestral man were the securing of food, and escape or defense from threatened danger. The solution of both these problems depended upon muscular exertion, and in consequence the motor function of man, as of other animals, became highly developed and specialized. While modified in some degree in the gradual process of adaptation to altered environments, the physical characteristics of the man of to-day remain essentially the same as those of his phylogenetic forbears. Thus we observe that the portions of the body most abundantly supplied with sensory nerve-endings are, generally speaking, the anterior portions,—those most exposed to injury in attack,—while the posterior portions are markedly less susceptible to pain and the internal organs are comparatively non-sensitive.

Irritation of a sensory end-organ anywhere is followed by a definite sequence of events, i. e., perception of the painful sensation by the brain centers and the immediate automatic liberation of a motor impulse designed to ward off the harmful agent or to remove the offended member from the zone of danger. Fear also plays a part and however well controlled in its manifestation, adds a disturbing psychic factor to the physical phenomena thus inaugurated.

Under inhalation anesthesia two things only are accomplished, namely, consciousness is abolished and the power of voluntary motion is paralyzed. The sensory nerve-terminals are as capable of being irritated, the afferent nerve tracts are as capable of transmitting painful impressions and the brain cells are as capable of receiving them and of discharging efferent impulses, as though the patient were fully conscious. This has been conclusively demonstrated both in the laboratory and in the autopsy room. Sections from the brains of traumatized animals and from human beings dying in shock show easily recognizable alterations from the normal, the individual cells differing both morphologically and in their staining properties. And this is equally true whether the subjects were under inhalation anesthesia or not.

The conclusion is that the pathologic entity underlying shock is brain cell exhaustion resulting from the constant futile discharge of motor impulses in response to prolonged peripheral stimulation or irritation. As a consequence of this fatigue there is a progressive reduction of the blood-pressure, the vaso-motor centers become incapable of functioning because of the resulting anemia, and the condition we know as shock follows.

The foregoing is a brief summary of Crile's conception of the nature and mode of production of surgical shock. His conclusions are not universally accepted. In a recent rather labored article by Janeway and Ewing,¹ based, it would seem, upon a wholly inadequate series of laboratory experiments, it is categorically denied that the stimula-

tion of sensory nerves is capable of producing either exhaustion of the brain centers or any considerable degree of reduction in blood-pressure. It is interesting to note in passing that these investigators attribute shock to loss of vaso-motor control superinduced by the hyperrespiration incident to ether anesthesia, to loss of blood, and to visceral trauma.

It is not without considerable significance that, in contrast with the dozen or so laboratory experiments and the relatively short time devoted to them by the above writers, Crile's researches included more than 1200 animal experiments extending over a long term of years, in addition to the careful clinical observations possible only in an extensive surgical practice.

Our chief concern at this time, however, is not with the theoretical, but with the practical,—not with the physiologic and laboratory phases of the subject, but with the clinical. Whatever the true nature of shock and the exact mechanism of its production, there can be no dissent from the proposition that its prevention is supremely desirable. If the hypothesis is admitted that the conductivity of the afferent nerve tracts and the ability of the brain cells to perceive stimuli are not abolished nor appreciably diminished by general anesthesia, it becomes at once apparent that neither theoretical objection nor captious criticism should deter us in the adoption of every additional expedient which has proved its value in lessening operative hazard.

The cardinal principles of anoci-association are four in number, namely:

- 1.—A preliminary hypodermic injection of morphine (gr. 1/6) and scopolamin (gr. 1/150) one and a half hours previous to the operation, repeating the injection an hour later in half the dosage, if the desired effect is not obtained.

- 2.—The administration of nitrous oxide and oxygen as a general anesthetic, instead of the customary ether.

- 3.—Complete blocking off of the field of operation by the infiltration of a weak solution (1/4 per cent) of a quickly acting non-toxic local anesthetic, preferably novocain.

- 4.—At the completion of the operation the infiltration of all tissues traumatized (except the skin) with a mild solution (1/4 to 1/2 per cent) of quinine and urea hydrochloride.

It would manifestly be impossible within the time limit allotted to this paper to discuss these several principles in detail. And it would probably be unnecessary to do so before this body in any event. But it may be emphasized that no one of them is unimportant. Together they constitute a definite, thoroughly tested system, and each step is absolutely essential to its successful application.

It is at once evident that the only feature of the method requiring especial skill and training on the part of the operator is the technic of the local anesthetization. To accomplish its object this must be as complete and perfect as though no general anesthetic were to be employed. With-

out experience along this line no one can expect to be entirely successful either in his first or his first half dozen cases. On this point Bloodgood pertinently says:² "No surgeon who has not performed many operations under local anesthesia only, will be able to get the same results from the combined method. When the patient is awake and you attempt an operation under local anesthesia, you will always be informed when a painful act takes place, and you will be surprised at the difficulty of making such an operation perfectly painless. . . . It is my opinion that the first step in the development of this new technic is to perform as many operations as possible under local anesthesia."

A distinct advantage of the method which is often overlooked in discussing it, is that it encourages, in fact compels, gentleness of manipulation. Nitrous oxide anesthesia maintained within safe limits is never as deep and death-like as that of ether and undue traction and trauma are much more apt to be resented by muscular contraction and rigidity. Rapidity in operating is, of course, desirable, provided it does not necessitate the sacrifice of thoroughness and due respect for the tissues. The surgeon who is too busy to concede the possible advantage of gentleness in his work will naturally have little patience and less success with this method.

Closing,—the real benefits of anoci-association in preventing post-operative pain, shortening the period of post-operative disability, and saving life have been emphatically attested by such well-known surgeons as M. L. Harris, Bloodgood, Cabot, Carr, Lower and a host of others, in addition to Crile. The first mentioned (Harris³) goes so far as to say that he has practically discarded general anesthesia and believes the method of nerve-blocking alone is so simple, so successful and possesses so many advantages that it marks the passing of the general anesthetic in surgical operations. This is truly "a consummation devoutly to be wished;" but few, perhaps, have as yet acquired sufficient exuberance of enthusiasm to endorse so radical a statement.

My own personal experience with the method embraces approximately 150 cases covering a wide range of different operations. Basing the observation on this personal experience I do not hesitate to say that in my opinion anoci-association represents the most notable step in the progress of surgery within the past two decades. Aside from the relief of human suffering and the saving of life, I count it the most gratifying feature of my surgical experience to have been able to perform a considerable number of major operations and find my patients uniformly in as good or better condition at the conclusion as at the beginning,—free from shock and with every promise that the period of disability would be both shorter and comparatively free from discomfort.

1. "The Nature of Shock." *Annals of Surgery*, Feb., 1914.

2. "Studies in Blood Pressure," etc. *Annals of Surgery*, Dec., 1913.

3. "Nerve Blocking," etc. *Journal A. M. A.*, Sept. 27, 1913.

THE NURSING SITUATION SINCE THE PASSAGE OF THE LAW.*

By GERTRUDE S. COURTRIGHT.

In approaching the discussion of a subject upon which such divergent views have been expressed, and which has been a basis for acrimonious private debate as well as legal argument, the task of treating the topic of this paper, in other than a partisan manner, is almost impossible. Naturally I will be charged with partisanship, irrespective of any observations that I may record, because of my personal efforts in connection with this particular legislation, no matter how accurate those observations may be—no matter how unaffected I may now be, personally, by the results that will follow, "as the night the day," upon the operation of this enactment of our legislature. Assuming that such an accusation of partisanship must therefore follow any article prepared by me—willing, nevertheless, under such conditions, to express my deductions, I wish to first make clear, if I can, the legal theory of such a law, and these preliminary statements are but an attempted repetition of information concerning the law applicable to the subject, and hence probably not as entirely correct as a lawyer would give it. The statute now provides, "No female shall be employed in any manufacturing, mechanical, or mercantile establishment, laundry, hotel, public lodging house, apartment house, hospital, place of amusement, or restaurant, or telegraph or telephone establishment or office, or by an express or transportation company in this state more than eight hours during any one day, or more than forty-eight hours in one week. The hours of work may be so arranged as to permit the employment of females at any time so that they shall not work more than eight hours during the 24 hours of one day, or 48 hours during any one week, provided, however, that the provisions of this section in relation to hours of employment shall not apply to nor affect the harvesting, curing, canning or drying of any variety of perishable fruit or vegetables, or to graduate nurses in hospitals." You will note that the statute in question arbitrarily designates certain classes of work and business in which, irrespective of the nature of the duty or work to be performed, a woman shall not be employed more than eight hours per day or 48 per week.

It has always been the assertion of those who have striven for the enactment of legislation limiting the hours of labor, that the purpose of such a law was the protection of women whose work was of such a character that long continued and closely confined duty in the performance of the work was detrimental to their health, and that, because of their "child-bearing possibilities," the health concerned must be protected and conserved against the demands of thoughtless and heedless employers.

No one will doubt that such legislation is not only beneficial to, but absolutely necessary, in behalf of many women whose earning methods and powers are limited, and with this legislation, when enacted

* Read before the County Medical Society of San Francisco, Cal., February 3, 1914.

with this purpose in mind, no reasonable or conscientious person should quarrel.

It seems to me that the *kind* of work to be performed by women should have more weight in framing this class of legislation than the place where work is performed, and that the relations of others to that work, the effect attendant upon its performance or non-performance, the possible necessities that cause or create the duties should be considered, as well as the fact that a *woman* is doing the work.

The question with which we are to deal is one that must be considered from several standpoints. Let me give an illustration that pictures a condition that seems to me fairly presents the contrast existing under this very statute. When eight hours have been served by a woman employed in any mercantile establishment, and as a result of the law, quitting time has arrived, it means that so far as producing profit for the employers is concerned, the doors of the shop close and work is suspended until another day. The customers of that employer are not concerned in the arrival of the hour, for if they have not made their purchase or transacted their business before closing hour arrives, the next day affords them equal opportunity for that purpose. As the sale of goods for profit is the only object of this employer, it is right that after a fair day's work from his women employees he be not permitted to require more. But in a hospital, while attending upon an operation, or the birth of a child, no matter whether the case be serious or otherwise, if the hour to quit comes for the student nurse in attendance, by force of law, she must cease the performance of her duty. The patient or patients are certainly not in the same category with the would-be purchaser or transactor of business who can or will wait to do or complete his business on the following day. The situation may be one of life or death and irrespective of the health of the healthy nurse, the life of the invalid should not be jeopardized by the arrival of an arbitrary hour at which attention and effort must cease, or a term in jail for violation of law provided as the only alternative of those compelled to complete their duty. At once I can hear the statement made that my illustration is false because of the ability of the hospital authorities to supplant one nurse with another at any moment. This answer is only made by those who have had no experience with illness or surgical cases. Almost as well say that in the midst of an operation the surgeons might be changed or that a patient will as quickly improve under a daily change of physicians. The fact seems to have been overlooked that women who are in training to become nurses are primarily engaged in learning how to bring health and strength to others, not solely to themselves. Admitting that their own health should be well conserved so that they may give to others that which they should strive to give, they have, or at least they should have, conscientiously dedicated themselves, their health, strength, cheerfulness, and vitality to the lives of others. Unless a woman entering upon the study of this profession is willing to give to the patients all

the inspiration of her mind and vigor and, cheerfully, grant her patient each day or night a large share of those qualities, as well as a degree of sympathy that can only spring from a kindly heart and an interested mind, far better for her possible patients that she should choose another profession.

Nursing must not be classed as work, it is a profession of sacrifice—not sacrifice in the sense of giving that which is unrecompensed—for the true nurse there comes recompense in witnessing the return to health of a patient nearing death; the recovery being somewhat due to her untiring effort and attention.

These beliefs lead me to ask of student nurses, are you enlisting in a fight for life or only in a business for money?

Either as students or graduates the work is hard, the strain great, the duty exacting, but there is no comparison with other lines of woman's life in satisfaction from the results. Are we to hereafter commercialize the misfortunes of others? measuring their miseries by their money? or should we give freely all that we have, taking no heed of fatigue, of possible injury to ourselves? Who would think of passing a law prohibiting a soldier from engaging battle more than eight hours a day or forty-eight hours a week when enlisted in the cause of his country?

Let us depart for the moment from these thoughts and take up the consideration of facts bearing upon the present situation. In hospitals, as compared with the past, is there any material change in the health or intellectual improvement of the student nurse as a result of the law? No. Grim necessity of daily recurrence has compelled almost every hospital that I have visited the last two months to violate the law, not only once or twice, but practically every day. And those hospitals that have obeyed the law are either thoroughly disorganized or refusing all but pay patients.

Unfortunate as it may seem, a hospital must meet its financial obligations, and this it cannot do, at least not at present, if but a portion of its patients contribute to the funds of the institution. I do not want to lay much stress upon this necessary refusal to accept poor patients, or the discontinuance of charity beds in contagious cases, that condition is indeed distressing; but dwelling upon that phase is provocative of the accusation that the law is being assailed by appeals to sympathy, and I am convinced that aside from the arguments that may be made on that ground, the law is justly open to attack.

The hours of labor may be regulated or restricted, but no governmental body nor officer ever lived, who, by a statute or threat of imprisonment could regulate or restrict the hours of sickness. The fact of sickness compels the duty of attendance upon the patient, and that attendance, if assigned to a student nurse, should be performed by one who through a desire to learn, and an interest in the patient, is not and should not be concerned in the location of the hands upon the clock. The very occurrence of the thought that at a specific

moment, soon to arrive, when interest in the work or individual can or must cease, is an *injurious distraction* that can do naught but lower the standard of attention required and lessen the amount of knowledge to be acquired. That such results have occurred is borne out by the statements of several directresses, one of whom cited an instance where a student nurse, in the midst of a critical operation, turned to the surgical nurse and called attention to the fact that it was time for her to go off duty. An expression of this character, isolated, I hope, not only indicates the attitude of the student nurse who is willing to assert the fact, but probably typifies the unexpressed thought of many others less assertive. With such a thought dominating the mind, how much knowledge is acquired? how much care taken of the patient? especially if a theater appointment with some one has been made upon the given hour.

Have the student nurses' hours been unduly long? From 7 a. m. to 7 p. m. with two hours each day and one hour off for meals; four hours off on Sundays and one-half day each week, which has been the schedule of general duty for day work, and while many hours may have meant unpleasant, fatiguing work, there have been as many hours of light, easy, and pleasant work as well. From 7 p. m. to 7 a. m. for one or two months, and all half days counted and given as off time, has been the schedule for night duty. A time when the majority of duties were almost perfunctory, a period that in the greatest number of cases meant only careful watching, while the mind of the student was being regaled by the effusions of some popular author or perhaps devoted to study—so far, where is the apparent necessity of shortening the hours so that the health of the "mothers of the future" may be preserved?

Admitting that eight hours is a sufficient number in which to do the work of the usual day, the criticism I make of this law is that it refuses permission to do the work *required* or *necessary* if that task cannot be done in eight hours.

To the layman, no reason appears why a patient should not receive the ministrations of four different nurses on special duty and many more on general duty in every 24 hours. A strict compliance with the law would compel that situation. We all know that as a rule one who is ill desires and should have as few persons as possible in attendance upon their wants. This is especially true of sick people whose illness or modesty prompts a degree of shrinking from intimacy with strangers. And there are few physicians who would not, because of mental disturbances of the patient, contend against this arrangement. It will not do to counter these suggestions with the assertion that if graduate nurses were employed no such condition would result. The conduct of a hospital is inseparably connected with the average ability of its patients to pay the expense, and its method of operation must be controlled with those facts in mind.

Those who conduct the hospital are certainly entitled to some return for their labor and upon their investment. If they conduct charity beds,

such must be charged to expense. The student nurses receive instructions from, as a rule, especially paid instructors, board, lodging, and laundry free, and a small sum in cash each month. And to these items add all the usual cost of hospital operation, and then add the expense naturally attendant upon increasing the number of student or graduate nurses so as to perform the work and obey the law, and I warrant that no hospital in this state will survive if it maintains a *reasonable schedule of charges* within the reach of the person of ordinary means.

No doubt this prediction will be denied—but time will show—if the law is eventually obeyed, whether it is justified. Our hospitals cannot be regulated or managed upon the basis of the eastern hospitals, where it is the usual thing to find an endowment fund working night and day to assist in meeting the expense. In California, but a few are so fortunate, and they may weather the storm, but the others will sustain the full effect.

Another feature of it that marks a wide difference between our hospitals and those in the eastern states, is that ours are much smaller in capacity. In theirs, during any hour, because of the great number of patients, a student has opportunity for observing a crisis and receiving instruction in handling the case through the period. There student nurses are on duty eight hours daily, 56 hours per week, and 12 hours night duty, and in the small hospitals do special duty more for purposes of instruction; but here, our small hospitals with few patients, the quitting hour may come at a time to prevent this observation and instruction, and to one who really wishes to perfect herself in the nursing profession, no chance should be lost in acquiring by observation, study, and contact all possible knowledge.

BOOK REVIEWS

Anatomy and Physiology for Nurses. By Amy G. Pope. 8vo, linen, pp. 554, illustrated. G. P. Putnam's Sons, New York and London, Publishers. Price \$1.75.

This is a good book, concise, explicit and practical. In the chapter on the Spinal Cord some explanation of lumbar puncture might not be out of place. The illustrations are not too numerous, clear and useful. L. E.

Guiding Principles in Surgical Practice. By Frederick-Emil Neef, B. S., M. L., M. D., Adjunct Professor of Gynecology, Fordham University School of Medicine, New York City. Sextodecimo; 180 pages. Surgery Publishing Co., New York. Price, Cloth, \$1.50.

In this little monograph Doctor Neef has given us a little work that is worth the perusal of every one that enters the operating room. While the operating room methods are but briefly described and do not even partially cover the field of general surgery, there is much that can be read with benefit to both surgeon and patient. The little chapter on wound healing is exceptionally clear and good, as is the part devoted to sterilization of the operative field, the instruments and the surgeon's hands. There is a lot of sound advice and good reasoning contained in this little book and it

is evidently prompted by conscientious observation and experience. While the number of methods and procedures described is a small and evidently personal one, they are probably those that the author has found best and most reliable. If a correction might be suggested, it would be that in the future the author refrain from the appearance of advertising a single brand of commercially prepared suture material, even if unintentionally. G. H. T.

The Occupational Diseases. Their Causation, Symptoms, Treatment and Prevention. By W. Gilman Thompson, M. D., Professor of Medicine Cornell University Medical College in New York City; Visiting Physician to Bellevue Hospital. Illustrated. New York and London: D. Appleton and Company, 1914.

This is the first book written in America devoted entirely to the subject of occupational diseases. Heretofore the subject has been treated briefly in works on hygiene and in monographs on particular forms of poisoning. The author takes up exhaustively every dangerous trade, gives us an idea of the methods used and of the various poisonous articles employed in the field of industrial arts. The etiology and symptoms of the numerous occupational diseases are considered in detail and a complete system of prophylaxis is laid down in each case. This country is far behind Europe in the prevention of trade diseases and it is only recently that the Federal, the State, and the labor authorities have seriously taken up the study of occupational disease. Every medical man should read this excellent work and familiarize himself with this important subject, for it is only by a widespread knowledge of the preventable waste of life through occupational hazard that we can hope to bring about the needed reforms.

W. F. McN., Jr.

Practical Therapeutics. Including Materia Medica and Prescription Writing, with a Description of the Most Important New and Nonofficial Remedies Passed Upon by the Council on Pharmacy and Chemistry of the American Medical Association. By Daniel M. Hoyt, M. D. Second Edition Revised and Rewritten. Published by C. V. Mosby Company, St. Louis, 1914.

This is a large book in which the size of the type and the breadth of the interspacing as compared with the subject-matter is based on law of inverse squares. For example, "Potassium Chlorate" is disposed of by the statement: "A useful antiseptic in the mouth or in the rectum; soluble in sixteen parts of water." Calcium salts receives two lines of description. Hexamethylenamine receives five lines. In this way the official preparations are disposed of in 200 anemic pages.

On the other hand, 130 closely printed pages tell all about the nonofficial preparations and their properties in much detail and with names and addresses of their makers.

An amusing commentary is supplied by the author who in a virtuous discourse on proprietary medicines points out that veronal (proprietary) and ethyl carbonate are practically alike in action—but in the body of the work veronal (plus names and addresses) receives nearly a page of letter press and ethyl carbonate, alas! nothing. Enough said.

H. D'A. P.

Lehrbuch der forensischen Psychiatrie. By Prof. Dr. A. H. Hubner. Published by A. Marcus & E. Webers. Bonn, 1914.

This volume discusses from different angles the

forensic aspect of psychiatric diseases. The size of the print and the clarity of exposition make the book very easy reading. A general psychological discussion, with symptomatology, occupies the first portion of the book. In this portion psychiatric diseases with their mental and somatic symptoms are discussed briefly. The next part is given over to the penal laws, both military and civil, from the German and international standpoints. Throughout the whole work, and especially in the last part, many examples of the important mental diseases are given in their practical bearing with the law. To the specialist this book is invaluable.

J. M. W.

General Surgery. Volume II of Practical Medicine Series for 1914. Edited by John B. Murphy. The Year Book Publishers, Chicago, 1914. Price \$2.

The newer things discussed at length in this very good volume are serum therapy of surgical infections, local and regional anesthesia, and bone surgery of the reconstructive as well as conservative type. The big problems of cancer and precancerous conditions receive a great deal of attention as does the field of gastro-intestinal surgery. Arthroplasty would naturally be considered *in extenso* by Murphy, who has done so much in this field. There is much of interest in the field of operative technic, especially as regards suture material and skin disinfection. It is true of this volume as of the others in this series, that if the bibliography be followed up, the reader will be placed in touch with nearly all of the best and latest in the scientific literature of the subject.

G. H. T.

Modern Surgery: General and Operative. By J. Chalmers DaCosta, M. D., Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia, Pa. Seventh edition, revised, enlarged and reset. Octavo of 1515 pages, with 1085 illustrations, some of them in colors. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$6 net; half morocco, \$7.50 net.

In this seventh edition, revision of the text-book has been accomplished without materially increasing the size of the volume. One new chapter has been added in which the carotid gland and thymus have been briefly discussed. There are nearly a hundred new illustrations, the majority of which are skiagraphs. The illustrations are more remarkable for their quantity than their quality. Some are worthless—e. g., skiagraph intra-capsular fracture of the hip. Others are poorly chosen. The chapters which deal with operative treatment of fractures, laryngology and X-ray have been especially improved. The subject of surgery is exceedingly well covered for a single volume text. Many of the statements are dogmatic. Some subjects which would be treated in a larger volume by the presentation of opposing views have been dismissed by the statement of one view which meets with the author's approval. The style of the book is pleasing. The student and practitioner will find here entertaining and helpful reading.

J. P. P.

A Treatise on Clinical Medicine. By William Hanna Thomson, M. D., LL. D., formerly Professor of Practice of Medicine and of Diseases of the Nervous System in the New York University Medical College; ex-President of the New York Academy of Medicine, etc. Octavo volume of 667 pages. Philadelphia and Lon-

don: W. B. Saunders Company. 1914. Cloth, \$5.00; half Morocco, \$6.50.

This book attempts to deal in a practical manner with symptoms and treatment. The result, however, is frankly disappointing. The author makes no apparent distinction between mere opinions of his own and universally accepted facts. Most remarkable therapeutic conclusions are drawn from quite unsupported assertions regarding physiological and pathological processes. The classification of infectious diseases is based upon the manner of their spread, not upon etiology. This classification appears to us illogical and confusing. Also, actual errors occur: Typhus is grouped as "contagious directly," that is not by an "intermediate agent." But no mention is made of the work of Ricketts or of Nicole in demonstrating that the body louse is the infecting agent. In the article on "Hydrophobia" the author states that there is no treatment, and absolutely no mention is made of the Pasteur preventive treatment. On the whole, the book does not appear to be a valuable contribution to clinical medicine.

H. S. F.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume III, Number 3. Octavo of 215 pages, 54 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Published bi-monthly. Price per year: Paper, \$8; cloth, \$12.

Contents:

Murphy's Clinical Talks on Surgical and General Diagnosis.

Tenoplasty; Tendon Transplantation; Tendon Substitution; Neuroplasty.

Tenoplasty on Wrist; Adhesions of all Tendons en Masse; Freeing and Wrapping of the Superficial Group in a Fat and Fascia Flap.

Traumatic Division of Flexor Tendons and Median Nerve; Tenoplasty and Neuroplasty.

Bony Ankylosis Between Ulna and Humerus Following Fracture of Olecranon; Arthroplasty.

Nailing of Fracture of Surgical Neck of Humerus After an Unsuccessful Attempt to Secure Union by Bone Transplantation.

Fracture-Dislocation (Subaracoid) of Head of Humerus. Reposition of Humerus Head into Glenoid Cavity as an Autoplastic Graft without Vascular Attachments.

Compound Fracture of Lower Third of Femur, Lower End of Upper Fragment Penetrating Knee-Joint and Resting Under Patella; Open Apposition with Lane Plate.

Carcinoma of Right Hip, Metastatic from the Breast. Excision. Bone Transplantation to Fill the Defect.

Carcinoma of Male Breast.

Osteoma of the Head of the Fibula; Removal of Tumor and Bone; Transplantation.

Penetrating Ulcer on the Lesser Curvature of the Stomach; Recurrent Hematemesis. Chronic Pericholecystitis. Posterior Gastro-enterostomy. Occlusion of Pylorus by Use of the Ligamentum Teres.

Sarcoma of the Ovary with Rotation of the Pedicle. Differential Diagnosis. Operation.

Ankylosis of the Jaw.

Anoci-Association. By George W. Crile, M. D., Professor of Surgery, School of Medicine, Western Reserve University; and William E. Lower, M. D., Associate Professor of Genito-Urinary Surgery, School of Medicine, Western Reserve University, Cleveland. Octavo of 259 pages, with original illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$3.00 net.

In this latest book from a rather prolific writer,

we have the culmination of his theories and work. Whatever loopholes there may be in Crile's delineation of the principles of shock, and no matter what physiologists may say to the contrary, he certainly has proved his case clinically. That there is more than a kinetic phase to shock may readily be conceded. But the whole superstructure of anoci-association rests upon a firm basis and needs no apologies. It is an established surgical principle and a highly beneficent procedure. In the hands of some it fails to carry conviction. But this only denotes the quality of technic employed. Used in its fullest application and given the advantages of time, dextrous surgery and understanding it speaks for itself in terms of freedom from shock, comfortable post-operative patients and a low mortality. As usual, Crile puts his preachment in a concise and forceful style. He has changed his opinion somewhat regarding blood pressure as the one criterion of shock. He also admits that spinal anesthesia is admissible as a means of establishing anoci in injuries of the lower extremities. This only denotes that he is progressive in his ideas and that his theories are not ossified. The present status of nitrous oxide and oxygen anesthesia is adequately described. For one who believes that in surgery there is a psychic factor, that a gentle hand is desirable and that there should be a minimum of trauma this book is highly suggestive and of a definite aid.

S. P.

Modern Medicine. Its Theory and Practice. In original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M. D., F. R. S., Regius Professor of Medicine in Oxford University, England; Honorary Professor of Medicine in Johns Hopkins University, Baltimore; formerly Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and in McGill University, Montreal; and Thomas McCrae, M. D., Professor of Medicine in the Jefferson Medical College, Philadelphia; Fellow of the Royal College of Physicians, London; formerly Associate Professor of Medicine in Johns Hopkins University, Baltimore. In five octavo volumes of about 1000 pages each, illustrated. Volume III. Diseases of the Digestive System—Diseases of the Urinary System. Just ready. Price per volume, cloth, \$5.00 net; half morocco, \$7.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This includes diseases of the digestive and urinary systems. The first part on diseases of the digestive system has been improved by condensation and abridgment. It is to be recommended as an encyclopedia in which can be found short, well-written descriptions of the many common and unusual affections of the digestive tract. The article on diseases of the intestines by Stengel is particularly good in this respect. As a text upon the disturbances of digestion, it is disappointing, partly on account of the unfortunate arrangement—one author writing on the functional, another on organic disease of the stomach; and a third on diseases of the intestine. The redeeming feature is an introductory discussion of the subject as a whole by Stockton. There we see that the various parts of the tract are so closely related that it is very difficult to divide up the subject in this way.

"Revision" of a book on gastroenterology is almost impossible to-day as a large part of the subject must be rewritten—it has changed so rapidly under the influence of the X-ray and what Moynihan calls "the pathology of the living"—the experience of surgeons in huge modern clinics. Friedenwald's article on the functional diseases is a good exposition of the old school. Brinton prophesied fifty years ago that more and more of the neuroses would be transferred to the column of the organic troubles; and some, like hyper-

chlorhydria, are so shaky to-day that little short of an exploratory laparotomy can justify a man in treating them as primary diseases.

A number of headings seem to us rather superfluous. For instance: Bulimia and Akoria—in one, the patient eats voraciously because he is hungry and in the other he does the same because he never feels that he has had enough. One is discussed on page 132 and the other on page 156. In Anorexia Nervosa the patient starves herself because she has no desire for food; in Sitophobia, the patient fears food. Both headings belong more in a treatise on insanity, as in our experience these people are generally insane.

The revision has not brought out much discussion of the X-ray work which has done so much lately for diagnosis. Here and there we find statements like this (page 261), "The fluoroscope and skiagraphic picture aid the diagnosis." These are patches and not warp and woof as they should be. It does seem to us that references, or at least the year in which the author wrote, would be a great help to those who want an introduction to the literature. Especially when a mistake is made, as on page 288, where Greutner is probably Grütznert, it would be impossible to confirm the reference. Some articles contain them, others do not.

The writers on kidney disease have used their space well, and some recent additions are discussed, such as the functional tests.

The book reads easily and the proof reading has been done remarkably well.

W. C. A.

Clinical Hematology: An Introduction to the Clinical Study of the So-called Blood Diseases and of Allied Disorders. By Gordon R. Ward, M. D., Fellow of the Royal Society of Medicine, Medical Society of London, etc. Octavo of 394 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$3.50 net.

The spirit and purpose of this work is to present blood changes as a unit only in the symptom-complex of the various diseases. The writer attempts also the difficult task of reclassification.

Very rightly are we warned against the considerations of blood diseases as entities per se, and the conditions accepted as true dyscrasias are most limited.

In the writer's opinion, the "microscopic" eye has lately been in such dominance that the zeal of laboratory investigation has overreached itself in those conditions where blood changes are manifest. "Blood examination is a good servant but a very bad master. It is true that we can sometimes diagnose a disease from a blood examination, but there is no condition of the blood which necessarily excludes either leukemia or Addisonian anemia, however rare the atypical case may be."

Chapters devoted to the afflictions of the red blood cells are the most complete and instructive; the various anemias are well grouped and most interestingly presented. There is also a tendency to clarify the hematologic nomenclature, as the tendency is to drop the term "polycythemia" and consider conditions of increased red blood cell production as either erythrocytosis or erythraemia, the one a relative physiologic and compensatory increase, the other the result of a hyperplastic process. So also is the tendency to consider as "pernicious" any anemia when it dominates the clinical picture. The anemias are broadly classified according to decreased cell formation and increased cell destruction—the rarer acute aplastic and congenital anemias, and the anemias of known cause (atrophic) are well differentiated from Addisonian anemia (so-called pernicious anemia). Emphasis is placed upon the fact that blood findings alone are distinctly misleading in determining

any type of anemia. The general symptomatology is given in sufficient detail to aid in differentiation. Chlorosis is not classified among the anemias, but as an affliction of the plasma. The blood volume is increased, also the cells, with a relative decrease in hemoglobin. The theory of deficient oxygen concentration is apparently not entertained by the writer.

In chapters concerning the white cells the leukemias are fully considered, although nothing new is presented. Leucocytosis, lymphocytosis, leukemia and eosinophilia receive but scant mention.

The various physical changes are considered as afflictions of the plasma or as a separate unclassified group. Hemophilia, purpura, hemoglobinemia, cyanosis, etc., are rather conventionally treated.

The work is entirely clinical. A few pages are given to technic and are rather weak. The chapters on anemia are exceptionally good. The book is written in good English and is of easy style.

E. A. V.

Ten Sex Talks to Boys (Ten Years and Older).

By Irving David Steinhardt, M. D. Published by J. B. Lippincott Co., Philadelphia and London, 1914.

Long before dramatic art realized that it had struck "Sex o'Clock" it was heard and heeded by the allied sciences, Medicine and Social Hygiene. In various European countries, societies for sex hygiene were formed and congresses held, and scientific periodicals founded to further and promote the knowledge thereof. The most notable in Germany was Zeitsch. f. d. Bekämpfung d. Geschlechtskrankh., and Zeitschrift f. Sexualwissenschaft. The general public participated in these congressional discussions and crowded the membership lists, and very soon there arose a cry from all sides to abolish the old system of mysterious secrecy in matters pertaining to sex and propagation, and to substitute therefor a world-wide movement of general instruction and education. "The young must know, protect our youth," became the battle-cry. Stirred on by the cause, men like Wedekind enlisted the stage in the fight, and in his great drama, "Frühling's Erwachen" (The Awakening of Spring), brought the question before the general public, and illustrated in a most forceful manner the possibilities of evil arising from ignorance. Other voices arose for the protection of the young, and one of the most recent utterances, Dr. Steinhardt's book, "Ten Sex Talks to Boys," comes from the camp of the medicine-man and is dedicated to our grandfathers, fathers, husbands, brothers and sons.

The first two lectures contain an account of the anatomy and physiology of the male sexual organs, the next three treat of the venereal diseases and their ravages, illustrated by some very gruesome pictures, the sixth lecture is devoted to masturbation, also to the solemn assurance that satisfaction of the sexual desire in any form or at any period of life is absolutely unnecessary for the maintenance of health, well-being or happiness, followed by a warning that night emissions, acting as a kind of safety valve, should not be interfered with and not lead one to consult quacks. The seventh and eighth contain the usual excellent moral precepts for the conduct of boys among themselves, and toward their girl companions and friends, and their protection in a life full of temptations and snares, also the dangers of alcoholic drinks. The following chapter is devoted to marriage and the duties it imposes upon husband and wife, whilst the last lecture gives some brief instructions upon the hygiene of babyhood.

At the end of each chapter are ten quizzes, useful as a short résumé of its contents, to be answered by the student.

The book presents an honest effort to give boys

an idea of the anatomy and physiology of the male sexual organs, and to warn them against the consequences and perils of premarital sexual intercourse. It does it in a rather forcible way, and conjures up the spectre of fear with all its horrors and ugliness. The real process of propagation, its evolution from the lowest forms of life up to the highest, its revelations and wonders and the appeal to the child's soul through the world of the beautiful instead of through the hell of ugliness, finds no place in this book. We will not quarrel on that account with the author; he doubtless knew what he was doing, for the limitations of these lectures probably are intentional, but we would like to have somebody write a book on sex hygiene wherein the process of propagation is briefly discussed and illustrated in characteristic progressive steps from the lowest forms of plant- to the highest forms of animal-life, and upon the wonderful revelation of nature's process, base the appeal to the growing mind for a life of beauty and harmony. An effort in that direction has been made, by the writer of this criticism, in some lectures he has held before different bodies on "Sex Hygiene As It Should Be Taught." In a work like Dr. Steinhardt's, calculated for the use of lay people, some statements may have to be made with more firmness than they deserve. Assuredly Professor Freund of Vienna and modern neurologists would hardly indorse the assertion, that the satisfaction of the sexual desire in any form or at any period of life is absolutely unnecessary for health or happiness. I add my feeble voice in protest alike. However, as one of the pioneers in sex instruction, the book has its merits, and we hope that future editions, which soon may be necessary, will add some of the improvements indicated. One of them would be the omission of Ernest Thompson Seton's colorless Sunday-school introduction.

J. R.

ILLEGALS PROSECUTED.

July 11th, 1914.

Dr. Charles B. Pinkham,
Secretary, Board of Medical Examiners,
San Francisco, Calif.

Dear Doctor—The Legal Department of Northern California submits the following as its report from June 15th to July 13th, 1914:

	Guilty	Disposition	Acquitted	Pending
Chow Juyan.....				1
Chow Let.....	1	\$600 and 6 mo.		
Yak Q. Gine.....	1	\$600 and 6 mo.		
Tom J. Chong..	1	\$600 and 6 mo.		
	3	\$1800 Fines	None	1

The Legal Department also reports the discontinuance of the following medical institutions:

Triest Supply Co., Oakland.
Dr. Hall's Museum, Oakland.
Pacific Pathological Laboratory, San Francisco.

Respectfully,
LOUIS H. WARD.

Federal Indictments.

Homer C. Edwards, H. Gray Martin, I. C. Gobar, J. B. Ryle, C. M. Fong, R. J. O'Connell, Lee K. Chinn, C. M. Scott, C. A. Baxter, E. J. Rice, G. M. Freeman, Sr.; J. T. Burns, T. Wah Hing, Ah Fong, Charles Low, Jang Kwai, T. Shue Wing, T. Foo Yuen, Arthur Penn.

SOCIETY REPORT

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Section on Medicine.

Tuesday, August 4, 1914.

1. Symptoms of the Pregnancy Toxemias, Their Etiology and Treatment, J. J. Hogan. Discussed

by Thomas Addis, A. B. Spalding, R. K. Smith and Martin Fischer.

2. Rupture of the Perineum, A. B. Spalding. Discussed by Dr. R. K. Smith.

3. A Case of Funnel Pelvis, J. M. Slemmons. Discussed by L. I. Breitstein and R. K. Smith.

General Meeting.

Tuesday, August 11, 1914.

1. Demonstration of a patient who had a slow, progressive subdural hematoma, and who first showed marked mental symptoms and a left hemiplegia five weeks after a supposedly slight injury to the head. A craniotomy was performed by Dr. Howard C. Naffziger, disclosing the hematoma which extended from the anterior to the posterior pole of the brain with a depth of 5 cm. Complete recovery. M. B. Lennon.

2. The Early Diagnosis of Cancer of the Rectum, A. J. Zobel. Discussed by A. Newman, C. G. Kuhlman and J. Rosenstirn.

Section on Surgery.

Tuesday, August 18, 1914.

1. Some Causes of Frequent and Painful Micturition in Women, M. Molony. Discussed by Dr. Henry Meyer.

Section on Eye, Ear, Nose and Throat.

Tuesday, August 25, 1914.

1. Demonstrations and Reports. (a) False Membranae Tympani in Both Ears. M. W. Fredrick. (b) 1 Cast of Luc's Abscess; 2 Persistent Bleeding from Middle Turbinate, of Unknown Origin; 3 Polynuritis Menieriformis Cerebalis of Frankl Hochwart, H. McNaught. (c) Demonstrations of Specimens of Carcinoma of Larynx and of Esophagus. H. B. Graham. (d) Demonstrations of Specimens: Glioma of Frontal Lobe and Sarcoma of Superior Tella Chorioidea, W. F. Schaller. (e) Report of Twenty Ear Cases Treated with Radium, M. W. Fredrick.

2. Sinusitis, G. W. Caldwell. Discussed by C. F. Welty and H. B. Graham.

PROGRAM NEVADA STATE MEDICAL ASSOCIATION.

Morning session, Tuesday, Oct. 13, 1914. 10 a. m.

Call to order by the President, A. P. Lewis.

Invocation, Rev. Samuel Unsworth.

Reading of Minutes.

President's Address.

Report of Delegates to the A. M. A.

Secretary's Report.

(1) Development of Public Health Work in Nevada, Mark F. Boyd, Reno. Discussion by S. L. Lee and J. A. Asher.

(2) The Perils of the Dispensing Doctor, Geo. I. Servoss, Gardnerville. Discussion by Herbert Colby and F. W. Owens.

Tuesday, 1:30 p. m.

(3) Some Phases of the Climate of Washoe County, Compared with Other Climatic Resorts, J. B. Hardy, Reno. Discussion by W. H. Wood and Geo. L. Ahlers.

(4) Things Medical (and otherwise) in Foreign Countries, J. E. Pickard, Reno.

(5) Nevada's Workmen's Compensation Act (correct title will be on program), Donald Maclean, Carson City. Discussion by C. E. Earley and J. J. Sullivan.

(6) Syphilis (full title will be on program), Harry E. Alderson, San Francisco (Stanford Medical School). Discussion by B. F. Cunningham and George L. Servoss.

Wednesday, 10 a. m.

(7) Rhinoplasty, with Clinical Demonstration.

Henry Bergstein, Reno. Discussion by J. LeRue Robinson and E. J. Howland.

(8) Streptococcic Infections (Especially of Nose and Throat), J. LeRue Robinson and O. P. Johnstone, Reno. Discussion by Drs. McKee and Welty, San Francisco.

(9) (Subject to be announced), Dr. McKee or Welty, San Francisco.

(10) The Use and Abuse of the Curette, H. Ostroff, Reno. Discussion by D. A. Turner and C. J. Richards.

Wednesday, 1:30 p. m.

(11) The Ideal Operation for Aneurysm (illustrated with X-ray and lantern slides), Geo. Rothganger, San Francisco (Stanford Medical School). Discussion by R. St. Clair and A. P. Lewis.

(12) Prostatic Calculi, W. L. Samuels, Reno. Discussion by H. Ostroff and Robert O'Neal.

(13) Uremia, H. J. Willey, Carson City. Discussion by Donald Maclean and B. Brown.

(14) The Importance of Diagnosis of Renal Diseases, Raymond St. Clair, Reno. Discussion by H. J. Willey and B. F. Cunningham.

Thursday, 10 a. m.

(15) Symptomatology of Brain Tumors (illustrated with X-ray and lantern slides), W. F. Schaller, San Francisco (Stanford Medical School). Discussion by J. B. Harris and Jno. A. Lewis.

(16) Surgical Treatment of Traumatic Epilepsy, J. B. Harris, Sacramento, Cal. Discussion by W. F. Schaller and Geo. McKenzie.

(17) The Relation of Milk to Public Health (illustrated with lantern slides), T. C. McCleave, Berkeley, Cal. Discussion by Mark T. Boyd and O. P. Johnstone.

(18) Joint Tuberculosis, Leonard W. Ely, San Francisco (Stanford Medical School). Discussion by R. St. Clair and H. Ostroff.

Thursday, 1:30 p. m.

(19) Cardio-Spasm (illustrated with X-ray and lantern slides), Rein K. Hartzell, Reno. Discussion by P. J. Mangan and C. W. West.

(20) X-Ray and High Frequency Therapeutics (exhibition of work being carried on), M. R. Walker, Reno. Discussion by S. K. Morrison and W. S. Holmquist.

(21) (Title to be announced), Martin Molony, San Francisco.

Election of officers.

The Entertainment Committee are arranging for two evening entertainments.

Unless some of our enemy's war vessels come up (or down) the Truckee and blockade us, this program will be presented complete.

Meetings will be held in the club rooms (Odd Fellows' Bldg.), as usual. Riverside Hotel will be headquarters.

NOTES FROM NEVADA.

Dr. W. H. Hood and family have returned from a month in Alaska.

Dr. and Mrs. Pickard have reached Toronto, on their way home from Europe.

Dr. H. J. Willey, from Kansas, has located in Carson City.

Dr. John Kitchen has returned from Colorado and is attending to Dr. Smith's work at Wonder while Dr. Smith is away for a month.

Dr. St. Clair and family spent the month of August touring California via auto. Dr. H. G. Knapp attended to Dr. St. Clair's work during his absence.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Nonofficial Remedies.

Arleo-Urease.—A standardized preparation of the ureolytic enzyme obtained from the soy bean. It decomposes urea into ammonia and carbon dioxide and is used in the estimation of urea in urine, blood and other body fluids. The ferment is added to a measured amount of urine and, after a time, the amount of ammonia formed is determined. Arlington Chemical Co., Yonkers, N. Y. (Jour. A. M. A., July 11, 1914, p. 165).

Urease-Dunning.—A highly potent and standardized preparation of the ureolytic enzyme obtained from the soy bean. It decomposes urea into ammonia and carbon dioxide. It is used for the determination of urea in urine, the amount of ammonium carbonate, formed from the ammonia and carbon dioxide produced is determined by titration with volumetric acid. Urease-Dunning is supplied only in the form of Urease-Dunning Tablets, containing 0.025 Gm. Hynson, Westcott & Co., Baltimore, Md. (Jour. A. M. A., July 11, 1914, p. 165).

Electrargol for Injection.—Ampules containing 10 Cc. electrargol in the non-isotonized condition. Comar & Co., Paris, France (Jour. A. M. A., July 11, 1914, p. 165).

Styptick Applicators, Alum 75 Per Cent.—Sticks tipped with a mixture of alum 75 per cent. and potassium nitrate 25 per cent. Admitted to the Appendix to New and Nonofficial Remedies. Antiseptic Supply Company, New York (Jour. A. M. A., July 11, 1914, p. 165).

Strychnine and Caffeine in Cardiovascular Disturbances.—Aided by a grant from the Council on Pharmacy and Chemistry, Dr. L. H. Newburgh has made a painstaking study of the action of strychnine and caffeine on cardiovascular disturbances. He concludes that, since the blood-pressure is not low either in persons showing grave symptoms of pneumonia or of those dying from that disease, and since it has been proved that the vasomotor arcs are normal in animals after death from pneumonia, it is logical to conclude that the vasomotor mechanism is not impaired in pneumonia. Strychnine does not improve or augment the work of the heart in persons suffering from broken cardiac compensation. It could not be shown that either strychnine or caffeine stimulated the cardiovascular apparatus in any of the conditions studied (Jour. A. M. A., July 25, 1914, p. 311).

Lithium Salts in Uric Acid Diathesis.—There is no reliable clinical evidence that lithium salts increase the excretion of uric acid by the kidneys, except as they exert a diuretic action. Experimental work has failed to show that lithium salts or the alkalis cause the absorption of deposited urates, gouty tophi, etc. The popular belief as to the action of lithia is founded on a misinterpretation of chemical facts. There is no reason why lithium salts should be expected to favor the solution of uric acid or urates in the tissues, the blood-serum or the urine (Jour. A. M. A., July 11, 1914, p. 184).

Administration of Fruit Acids.—The administration of the salts of the ordinary fruit acids is useful whenever it is desired to increase the alkalinity of the blood and diminish the acidity of the urine. Important investigations indicate, however, that it is scarcely feasible to produce any very marked effect on the alkalinity of the blood

in this manner. If the physician believes that the alkalinity of the blood is an important factor in the recovery from gout and rheumatism, the administration of the salts of fruit acids is appropriate. Citrates should be preferred to tartrates, for the latter are imperfectly converted to carbonates and, when given in large quantities, may cause irritation of the kidneys (Jour. A. M. A., Aug. 1, 1914, p. 420).

Radium in Cancer.—Radium can be used successfully to destroy growths on the surface whose entire extent can be exposed to its energy. Extensive growths involving deep structures and disseminated growths are beyond its control, and there is no reason to believe that they will ever be brought within its control. The effects and the limitations of radium in the treatment of cancer are the same as those of the Roentgen ray (Jour. A. M. A., Aug. 29, 1914, p. 787).

Tooth Detergents.—While many tooth preparations are alkaline from soap which they contain, it is probable that weakly acid preparations are to be preferred. As the antiseptics in tooth powders and washes do not remain in the oral cavity for any length of time, they cannot exert any beneficial antiseptic action. Antiseptics may even be harmful in that their periodical application may render the organisms which infect the mouth more hardy and vigorous (Jour. A. M. A., July 4, 1914, p. 50).

Assimilation of Calcium Phosphate.—Extensive experiments have demonstrated the availability of calcium phosphate for the bone formation of growing infants. This is a further proof of the power of the human organism to utilize inorganic substances (Jour. A. M. A., Aug. 15, 1914, p. 581).

Poisoning by Boric Acid Dressing.—While wet boric acid dressings are harmless, this is not true of dry, powdered or crystallized, boric acid. Alarming symptoms resulted from the application of dry boric acid to wounds caused by a burn (Jour. A. M. A., Aug. 15, 1914, p. 593).

Toxicity of Camphor.—A case is reported in which an 18 months old child was given, after a meal, a teaspoonful of camphorated oil (linimentum camphorae) by mistake. While this dose must have contained about 15 grains of camphor, no untoward symptoms were observed (Jour. A. M. A., Aug. 15, 1914, p. 579).

Sodium Fluoride.—While the poisonous character of fluorides is recognized, the use of sodium fluoride as a food preservative is still considered. As a result of experiments, F. Schwyzer concludes that fluorine preparations are poisonous even when administered in very small doses (Jour. A. M. A., July 25, 1914, p. 323).

Mixed Vaccine and Phylacogens.—The unscientific character of mixed vaccines and of the mixed filtered products of a number of vaccines marketed as "Phylacogens" has been especially emphasized and the danger from their indiscriminate use pointed out. Recently John F. Anderson held that the claim that the combination of dead bodies or the filtered products of a number of different bacteria are useful for the treatment of certain diseases with a specific cause, closely approaches quackery. Victor C. Vaughan also has pointed out the danger of the indiscriminate use of bacterial products and observed that untoward results are rarely reported. Physicians who are tempted by the optimistic statements of manufacturers to give complex bacterial products a trial, should remember that the warnings of disinterested scientists are of far more value than uncritical clinical reports put out under commercial auspices (Jour. A. M. A., Aug. 29, 1914, p. 785).

Pertussis Vaccine.—The Bordet-Gengou bacillus is recognized as the cause of whooping cough and a vaccine prepared from it is used with success, although it is the general experience that when a child is already in the stage of incubation, the

vaccine will not prevent the development of the disease (Jour. A. M. A., Aug. 29, 1914, p. 796).

Scarlatina Vaccine.—The so-called scarlatina vaccine is said to consist of killed streptococci from scarlet fever cases. While the infectious agent of scarlet fever has not been established, the close association of streptococcus with scarlet fever has been considered a warrant for the use of anti-streptococcus serum, and various vaccines prepared from this organism, in the treatment of scarlet fever (Jour. A. M. A., Aug. 29, 1914, p. 796).

Vaccine and Serum in Hay-Fever.—A serum for the treatment of hay-fever is described in New and Nonofficial Remedies. Theoretically there can be no vaccine treatment of this disease for the reason that it is produced, not by bacteria, but by the pollen of various plants. The use of vaccines derived from the micro-organisms found in the nasal secretion are still in the experimental stage (Jour. A. M. A., July 25, 1914, p. 340).

Shortage of Drugs.—In view of possible drug shortage, physicians should bear in mind that many proprietary foreign preparations are made and sold in the United States under their descriptive names, thus dionin as ethyl morphine hydrochlorid, urotropin as hexamethylenamin and diuretin as theobromin sodium salicylate (Jour. A. M. A., Aug. 22, 1914, p. 692).

Wine of Cardui.—While the Chattanooga Medicine Company asserts that in the manufacture of Wine of Cardui no more alcohol is used than is necessary to preserve it, experiments indicated that the preparation contains only water-soluble constituents and that a non-alcoholic preparation might easily be prepared. Also, despite the owner's assertion that Wine of Cardui cannot be used as a tiple, large doses were taken experimentally with no observable effects other than those of alcohol; further, letters from physicians assert that the preparation is used habitually, evidently for its alcohol effects—probably unconsciously. The exploitation of Wine of Cardui is vicious and the public should be apprised of the facts (Jour. A. M. A., July 18, 1914, p. 258).

Veracolate, Marcy & Co.—Veracolate is a proprietary said to consist of the salts of the bile acids, sodium glycocholate and sodium taurocholate, with cascara and phenolphthalein. While bile salts are said to increase the secretion of bile, it is doubtful whether this increase in the secretion of bile is of value in the treatment of gall-bladder affections. There is no occasion for the use of bile salts combined with fixed quantities of cathartics, which should be added only when they are needed. The advertising claims for Veracolate show a tendency to extravagant statements (Jour. A. M. A., Aug. 1, 1914, p. 420).

Hectine.—Hectine, referred to in newspapers as a treatment for hay-fever, is a French proprietary, stated to have a composition similar to that of atoxyl. If its composition is in accordance with the claims its action probably is no better than that of atoxyl. Arsenic is used in the treatment of hay-fever with success in some cases (Jour. A. M. A., Aug. 8, 1914, p. 502).

Robinol.—Robinol is a glycerophosphate mixture exploited by John Wyeth & Brother on the discarded theory that certain diseases are due to a loss of phosphorus from the body and that this phosphorus deficiency is best remedied by administration of glycerophosphates. There is no evidence that glycerophosphates when administered act differently than do inorganic phosphorus compounds. At all events, if phosphorus deficiency really occurs, it would be more rational to supply the needed phosphorus in the form of foods rich in phosphorus such as milk and eggs (Jour. A. M. A., July 4, 1914, p. 49).

Sevetol.—There was a time when physiologists thought that fats were absorbed into the blood in the form of a fine emulsion. It is now known

that fat enters the blood after having been split into glycerol and fatty acid, the latter being, to a large extent, combined with alkalis in the form of soaps. Making use of the discarded theory Sevetol, put out by John Wyeth & Brother, is presented to the profession with the claim that it is a very fine emulsion of fat and because of this is readily absorbed. While Wyeth & Brother would have physicians believe that Sevetol is readily absorbed and digested, it is evident that the amount of Sevetol which can be taken is limited not only by the power of assimilation but also by the power of digestion (Jour. A. M. A., July 4, 1914, p. 49).

Warning Against Worthless Antifat "Cures."—Numerous inquiries received recently by the U. S. Department of Agriculture indicate that promoters of so-called obesity remedies and fat-reducing cures are using an old trick dressed in new clothes to deceive fat people into spending money for worthless or dangerous preparations. The advertisements appeal to the vanity of people who wish to regain graceful figures and also to the business necessities of those who become so fat that they can no longer do their work efficiently.

In order to be able to give a definite reply to many people inquiring about specific remedies, the drug specialists of the Bureau of Chemistry recently conducted a series of tests with a number of nostrums of this character on employees in the Department who wished to lose surplus flesh without injuring their health. One of the most widely advertised so-called prescriptions for reducing flesh was tried for a period of six months. The result was that two of the subjects under experimentation were obliged to stop after taking the medicine for two or three weeks because of its injurious effect. The third subject gained $2\frac{1}{2}$ pounds instead of losing flesh. Another of the so-called remedies of a "Great Obesity Specialist" was tried. The subject scrupulously followed the diet list which accompanied this remedy and faithfully carried out the system of exercises recommended. After six months' treatment there was a reduction of 18 pounds of flesh but this the experimenters attribute to the fact that the subject ate no bread, butter, starchy food, pastry, sugar or candy while under observation. The first month after discontinuing the treatment the subject gained 10 pounds, and in three months was back to the original weight recorded at the beginning of the treatment.

These preparations usually contain thyroids and a laxative. The thyroids may prove very hurtful unless given under the advice of a physician personally familiar with the subject's physical condition. The Department has on record an instance where death has followed overdoses of preparations containing thyroids. Other preparations contain poke root (phytolacca), a poisonous drug, and others, analysis shows, contain nothing that could possibly have the slightest effect in reducing flesh.

No other class of preparations exploited to humbug the people has a wider sale, and in nearly every instance they are absolutely worthless. In many cases where patients seem to lose weight this result is attributed to the hot baths and the diet and exercise recommended as an accompaniment in taking the medicine.

The only ways that the Department's specialists know of safely reducing flesh are rigid dieting, and strenuous exercise, and those to be effective must be continued over a long period of time. The fat reducing patient must eliminate from his diet fats, starchy foods and sugar. In many cases it is not wise because of other physical conditions for fat people to attempt any rapid reduction in weight. As a general rule diet and exercise are best directed by a skilled physician. Loss of flesh is by no means a blessing if accompanied by loss of health, energy or strength.

The Post Office Department has been instru-

mental in silencing some of these promoters by issuing fraud orders against them and denying them the use of the mails. The Department of Agriculture can only warn the people to beware of all such preparations containing such claims, for in the knowledge of all drug specialists at the present time there is no preparation that can be depended upon to reduce flesh in any marked degree without doing injuries.

WHAT CONSTITUTES FIRST AID?

To the Editor:—We are having a controversy with a liability company as to what constitutes first aid in fracture cases. We maintain that this includes the reposition of the fracture and the X-ray pictures necessary for its successful reduction. The liability company says that radiographs cannot be included in first aid. Our attorney tells us that there has been no ruling on that point in this state. Please tell us the ruling in Illinois or adjoining state or advise us in any other way on this point (What constitutes first aid?), as we are inclined to make a test case of this rather than accept the niggardly offer of the liability company.

T. J. BILLION, M. D., Sioux Falls, S. Dak.

Answer.—What constitutes "first aid" is a question of considerable importance, owing to the great increase of accident and liability insurance. So far as we are aware no judicial decision has been handed down defining "first aid"; but a brief reference to the manner in which the term came into general use will aid one in arriving at a clear understanding of the scope of its meaning. When a person is accidentally injured or suddenly taken ill, it is perfectly natural for those about him to render any aid or assistance within their knowledge and power. The humanitarian principle underlying such service has been long recognized and has inspired the formation of societies of laymen, the members of which receive a certain amount of instruction in order that they may be better able to render such service in an emergency. These societies are usually called first-aid societies, the idea being to give aid pending the arrival of a physician or surgeon.

The importance of doing something to relieve the injured, and particularly in the case of wounds to protect them from infection as much as possible, has caused most industries, railroads, etc., to provide first-aid outfits and to have certain of the men instructed in giving first aid until the patient can be turned over to a physician, or can be removed to a settled place such as his home or a hospital. There can be no question that the service thus rendered by laymen in such emergencies is "first aid"; but now suppose the one nearest at hand to the injured is a physician, or suppose that some one with no other authority than that of trying to do something to aid one in trouble summons a physician. Does the physician give "first aid," and if so, what is included in "first aid"? Should the patient require anything more than a momentary service it is perfectly evident that he must be removed to some suitable place such as his home or a hospital before any definite line of treatment can be undertaken.

Such temporary measures, then, as may be used to enable or to facilitate the removal of the patient to some settled place where a definite line of treatment may be instituted constitute "first aid," whether it be given by a physician or a layman. The fact that the physician's efforts may be more intelligent than the layman's does not change the principle.

When the patient has reached his home or a hospital, or other place, and is turned over to his own physician, or to the hospital surgeon, or wishes to continue the services of the physician first called, then "first aid" ceases, and definite treatment be-

gins. In large cities many patients suffering with injuries are brought to a hospital without ever having received "first aid," unless the mere act of transporting them may be considered "first aid." After such a patient reaches the hospital he does not receive "first aid," but definite treatment is instituted; and by the mere fact that the first thing done for him is done at the hospital, that first thing does not constitute "first aid." "First aid," then, may be defined as the temporary measures carried out in emergencies by any one, layman or physician, preliminary to the institution of a definite line of treatment by the physician in charge.

With this conception of "first aid," it seems clear that the taking of roentgenograms and the permanent setting and dressing of fractures is not "first aid," but definite treatment.—Journal A. M. A.

PUBLIC HEALTH SERVICE.

Boards of commissioned medical officers will be convened to meet at the Bureau of Public Health Service, San Francisco, Cal., on Monday, October 19, 1914, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service, when applications for examination at these stations are received in the Bureau.

Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service in hospitals for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work.

Candidates must be not less than 5 feet 4 inches, nor more than 6 feet 2 inches, in height.

The following is the usual order of the examinations: 1, Physical; 2, Oral; 3, Written; 4, Clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate and that they will serve wherever assigned to duty.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists of examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital.

The examination usually covers a period of about ten days.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order. They will receive early appointments.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Assistant surgeons receive \$2000, passed assistant surgeons \$2400, surgeons \$3000, senior surgeons \$3500, and assistant surgeon generals \$4000 a year. When quarters are not provided, commutation at the rate of \$30, \$40 and \$50 a month, according to the grade, is allowed.

All grades receive longevity pay, 10 per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For invitation to appear before the board of examiners, address "Surgeon General, Public Health Service, Washington, D. C."

EIGHT-HOUR LAW FOR NURSES.

At the last meeting of the Association of Superintendents and Training Schools of the Hospitals in San Francisco and Alameda counties, the motion was made and seconded that copies of the proposed universal eight-hour law be sent to Training School Superintendents in California, Alumni Associations, Association of Hospital Workers, County and Nurses' Association, and the State Medical Association, requesting them to forward their objections, and take action to defeat this proposed law.

Very truly yours,

SARAH C. OLMSTED, R. N.,
Secretary.

POST GRADUATE COURSE FOR NURSES.

There is now a movement on foot at St. Luke's Hospital to inaugurate a systematic Post Graduate Course for Nurses. This course is not intended to be one by which nurses are simply instructed in the modern methods now in use in hospitals, but is intended primarily to instruct graduate nurses in the management and control of different departments, with the view of training those who take the course for the positions of Superintendents of Nurses, Dietitians, Hospital House-keepers and Superintendents of small hospitals.

Miss Amy Elizabeth Pope, for many years connected with the Presbyterian Hospital in New York, and one of the best and most widely known educators in the nursing field, has consented to institute this course, and we feel that it will be a great benefit to the nurses of California, in giving them an opportunity to fit themselves for executive work, and for assuming large responsibilities.

TRAVEL STUDY CLUB.

The Travel Study Club of American Physicians, which made a successful study tour of Europe last year, has completed the plans for its 1915 study tour to the A. M. A. meeting in San Francisco, Honolulu, Japan, the Philippines, China, with optional return via Siberia and Europe, or via Canada. This being the first party of American physicians ever visiting the Far East and the new possessions of the United States, a most cordial welcome can be expected by authorities and members of the medical profession. The Travel Study Club would like to make its enterprise as representative as possible and asks all those interested to communicate with the secretary, Dr. Richard Kovacs, 236 East 69th street, New York.

NEW MEMBERS.

Carico, J. W., Cloverdale.
Behlow, Wm. Wallace, San Francisco.
Williamson, Norman Eccles, Sacramento.
Phillips, La Forrest E., Palo Alto.
Leach, Chas. N., San Jose.
Sawyer, Frank Wade, Paso Robles.
Zaiser, Harry Edgar, Santa Ana, Cal.
Dixon, R. E., Hanford, Cal.
Sperry, Mary A., San Francisco.
Herrick, A. B. Jr., Santa Rosa.
Bixley, W. E., Sebastopol.

DEATHS.

Gladding, Chas. F., Oakland, Cal.
Safely, Grant (Died in Sacramento).
Swift, S. B., Stockton.
Freeman, Eugene Nesbit, Grafton.
Walker, A. D., Arlington.
Pinney, Edward (Died in Duarte, Cal.).
Winslow, Chas. E., Monrovia.
Huning, F. H., Ventura, Cal.
Hazlett, I. W., San Bernardino.
Smith, W. Gray, Oakland.
Mason, W. M., Lodi.
Turner, G. Burton, San Francisco.

California State Journal of Medicine.

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be
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Notify the office promptly of any change of address, in
order that mailing list and addresses in the Register may
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VOL. XII NOVEMBER, 1914. No. 11

EDITORIAL NOTES

CRIME NO. 46.

"The Drugless Healer Act," initiative measure No. 46 on the election ballot to be voted for November 3rd, is nothing less than a crime; it has been put on the ballot largely through misrepresentation to those who signed the initiative petition.

It would license anyone who has practised any sort of drugless healing for six months previous; chiropodists, barbers, masseurs, etc., and without any consideration of education, good moral character, etc.

All this horde of ignorant, illiterate quacks and worse would be authorized to use the designation "Dr." and to call themselves "doctor."

They may not prescribe medicines, but they may do any sort of surgery; they may not give an ointment for a sore arm, but they may cut it off.

They are authorized to sign birth and death certificates and any other public certificates or documents required to be signed by a doctor.

It would not directly hurt the medical profession, but it would be a calamity to the public who cannot discriminate between unknown people when they are all called alike, doctor.

There would be no way for the innocent, sick stranger to know whether he was calling in a quack or a regular physician, and he would be the sufferer.

If the initiative is carried at the election, it becomes a law without further action by the Legislature; the matter will be settled on November 3rd, at the polls.

Initiative No. 46 should be voted down by the people for their own protection.

How many voters can you explain this to before election day?

REAL THANKS-GIVING.

In this month of November comes the day that is customarily set apart by the President of the United States as a day on which all the people of this country should give thanks for life, liberty and an opportunity for the pursuit of happiness. Perhaps the day has been looked upon, for many years, in a perfunctory way, merely as another welcome holiday, its significance not perceived. But how about this year? Will there not be, in the heart of every one of us who thinks, some very real feeling of thanks for the inestimable blessings our forefathers have handed down to us in those three things—life, liberty and the pursuit of happiness? Has there been a time in nearly half a century when we had such good and sufficient cause to give earnest and sincere thanks? Our population is made up of the peoples of all countries and doubtless there is hardly a city in the land in which there is not some home saddened by the thought of a relative who has gone into the hungry maw of the European war devil; these will be sad, but at least they live in peace. Many, nearly all, salaried people have had some reduction made in their incomes, either directly or through the increase in the cost of what they must buy; many have lost their employment; producers, in the main, have been unable to market their produce. But patience and courage will see the end of this tightness; what the earth produces is needed by the people of the earth for their consumption, and eventually it must be marketed and paid for and consumed. Also, work must be done and labor must be compensated, for "the laborer is worthy of his hire," and so those whose employment has gone will, in time, find other lines of activity; other employment. We have peace and we have a chance to live and work for a living; and while we may, for the time being, have to cut out some of the luxuries or the inessentials, we still may pursue happiness in innumerable innocent and inexpensive ways. Surely, and of a certainty, we have many things to give profound thanks for; and but a second's thought of the unspeakable Hell of Europe, at this present time, will convince the most unhappy or pessimistic individual that now, if ever, is a real Thanks-Giving day appropriate.

A. M. A. MEETING, JUNE 1915

Whatever you do or do not do, don't forget the meeting of the American Medical Association in San Francisco in the third week in June 1915.

Begin now to remember it and to make up your mind to attend that session.

Remember, too, that there will be other medical meetings of great interest in San Francisco the week before and the week after the A. M. A. meeting. Plan now so that you can attend some or all of these. Announcements will be made later of the societies and the dates of their meetings and other items of interest in connection therewith.

Remember, too, that the Exposition will be open and that you will want to see it and study many things exhibited in it. Take your holiday in San Francisco in June next year and combine profit and pleasure and entertainment.

NO STATE SOCIETY MEETING IN 1915.

The American Medical Association will meet in San Francisco in the third week of June 1915, as presumably you all know. A large number of members had asked that the regular annual meeting of the State Society, which would be held in April, be omitted for this year and our members be urged to attend the A. M. A. meeting instead. The request not to hold a meeting was presented to the Council at its meeting of September 12th and the Secretary was instructed to take a mail ballot of the House of Delegates on this point; see the October JOURNAL, page 398. Sixty-five ballots were received within the appointed time and of this number five were not signed. Of the 60 signed ballots, 55 voted against holding any meeting and five voted for a meeting, two of these suggesting San Diego as the place to hold it. On the question as to whether there should be held a meeting of the House of Delegates on one day in the week in June when the A. M. A. was in session, 32 voted against such a meeting and 28 voted for it, most of the latter qualifying their opinion by saying "if it is necessary." It is quite evident from this vote that it is very emphatically the wish of the members not to hold any session in 1915.

COUNCIL MEETING.

On the night of October 10th, there was held a special meeting of the Council for the purpose of considering the question of medical legislation which had been referred to it by the House of Delegates at the last session. It will be remembered that at that time a resolution was introduced calling for the Society to have prepared and endeavor to secure the passage of a bill doing away with the present form of one board of examiners and creating for the regular profession a board of examiners of regulars only with very high standards, ignoring all other schools or pathies and allowing them or the legislature to do as they pleased. A number of those interested in the matter attended the meeting and discussed the question very fully and completely, after which the Council unanimously passed a resolution to the effect that it was the sense of the Council that the conjoint board, with standards and requirements as high as practicable, best served the people and the profession.

"Initiative No. 46" was also brought up for discussion. This measure has been placed on the ballot through the efforts of many drugless healers and a large horde of quacks and unlicensed physicians. It would license almost anyone who wanted to prey upon the sick or afflicted, to do so, and would allow them all to do any sort of surgery they pleased. The Secretary was instructed to advise all the county units of the danger to the people that this measure threatened and to ask them to educate their members and through the members as many people as possible, of the viciousness of the proposed law. A committee was appointed to take further action in the matter of publicity, etc.

EXPERT TESTIMONY.

The subject of proper expert testimony and the doing away with the unpleasant spectacle of two groups of "experts" testifying in diametrically opposite ways because they are paid to do so, is one that has interested the better men in all professions for a good many years. Various associations of doctors, engineers, etc., have, from time to time, been formed with the object of attempting to secure legislation that would put an end to the scandal. The San Francisco County Medical Society held a meeting on October 13th at which this subject was discussed conjointly with a number of lawyers and jurists of repute. It would be well to hold more such meetings and, in the smaller counties, possibly to do as Monterey County has done for several years—have an annual meeting and banquet with the bar and bench and thus bring the two professions more closely together. We can do little alone, but if we can enlist the hearty support and co-operation of lawyers and judges all over the state, it is possible that in time a satisfactory law may be drawn up and passed.

MORE REAL HELP.

The Secretary of one of our County units bought a syringe from one of our advertisers, and in a letter to him remitting the amount, he says that he will call the attention of the members of the society, at its next meeting, to the excellent character of the instrument, reasonable price, etc: "You are entitled to this as a constant advertiser in the JOURNAL." Certainly. The members are entitled to know of a good thing; the dealer is entitled to the help and the support and patronage of the members, for he helps the members by advertising in their JOURNAL; and the JOURNAL guarantees the reliability of what he advertises. This is true of all our advertisers and it is our duty, especially at this time, to co-operate with those who co-operate with us. Please do your part to help.

PRICES AND SUPPLIES.

Due to the war, prices on many things have fluctuated and are constantly changing and some things are not to be had. Mr. Walters, of the Walters Surgical Co., says that the manufacturers raised the price on enamel ware and a number of other office and hospital furnishings almost at once and that all dealers have been forced to make the rise in price noted last month. A long list of drugs and chemicals has gone soaring and some items are getting to be very scarce even now. Fritsche Brothers, the New York agents, advise that their stock of Pollantin liquid (Dunbar's serum for hay fever) is entirely exhausted and that they are unable to secure any more even for the current season; there is also a very limited supply of the other Pollantin preparations.

APPARENTLY UNJUST.

Under date of September 18th, 1914, the editor of the *Southern California Practitioner* sends out a letter, a portion of which is as follows:

"The editor of this publication has been indicted by the federal grand jury on the charge of sending through the mails indecent matter described as 'obscene, lewd and lascivious,' because we published as an original article in our March issue a paper entitled 'What Fools these Mortals Be,' written by Dr. H. O. Hyatt of Kinston, N. C."

In the first place, this JOURNAL regrets most sincerely that this trouble and expense has fallen upon Dr. Malsbary, for even though he will probably be acquitted of any such charge, it will be a source of trouble and expense to him to defend his case. Government interference with medical publications is sometimes an absurdity, as witness the case of the British government proceeding against the book-seller who handled Havelock Ellis' first book, imposing a fine of 500 pounds and condemning the edition! It was subsequently reprinted. The article in the *Southern California Practitioner* to which exception is taken by the postal authorities is neither particularly well written nor is it in the same class with the contributions of Havelock Ellis; but it does contain certain things which it would be well for physicians to remember when they must advise or discuss with their patients matters relating to the sexual act, and as it is intended for physician readers exclusively, it could hardly be considered, certainly it could not be so considered by any physician, as "obscene, lewd and lascivious." Of course, such an article could not and would not be printed in a lay publication or in anything intended for the general reader; but it is equally true that very many articles are published in medical journals that could not be published in lay publications; they are intended exclusively for physicians and would be meaningless or injurious if scattered broadcast for perusal by the general reader. It certainly seems very unjust to proceed against the editor of a medical journal for publishing an article on sex relations when, in his judgment, it contains matter which should be brought to the attention of physicians. The physician holds a peculiar relation to the families of his patients and he is called upon to advise about the most intimate things; therefore he should be taught, he should know these things, and from time to time his memory should be refreshed upon them. This is for the good of the people themselves and not for their hurt. We sincerely trust that Dr. Malsbary will have little difficulty in getting rid of this case against him.

ORIGINAL ARTICLES

EARLY SYMPTOMATOLOGY OF SUB-ACUTE BACTERIAL ENDOCARDITIS.

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During the past three years we have had opportunity of studying a number of cases of bacterial endocarditis of the subacute and chronic types. Our series consists of eighteen cases, of which thirteen were admitted to the medical clinic wards of Lane Hospital, three were seen in private practice by one of us (Wilbur) and two were seen in private practice by Dr. A. B. Spalding. Of the eighteen cases sixteen resulted fatally and two were discharged from the hospital improved and have not since been seen. Autopsy was performed on thirteen cases. In every case our diagnosis was confirmed by the isolation of bacteria from the blood during life, or from the lesions in the endocardium at autopsy.

Different names have been suggested for cases of this type, including malignant non-septic rheumatic endocarditis (Litten), endocarditis lento (Schottmuller), subacute malignant endocarditis, subacute septic endocarditis and subacute infectious endocarditis, but we have adopted the nomenclature of Libman on account of the simplicity of his classification. Libman includes under the name Bacterial Endocarditis all cases in which a bacterial etiology has been established, and he subdivides his cases into acute, subacute and chronic, according to the clinical course of each case. He further subdivides his cases as soon as the infecting organism has been identified; for example he speaks of acute, subacute or chronic streptococcus endocarditis, acute, subacute or chronic gonococcus endocarditis, etc., so that in the final classification we have before us the etiology and type of each particular case.

The relation of subacute and chronic bacterial endocarditis to malignant or septic endocarditis on the one hand, and to simple rheumatic endocarditis on the other has long been a subject of uncertainty. In 1889 Litten recognized a sharp distinction between those cases which were associated with acute sepsis of a secondary nature, usually streptococcus infections following abortion or delivery, and those of the type which we are describing. He pointed out that in the former cases the cardiac condition was merely an incident in the whole general pathological process, and that the cardiac symptoms in no way indicated that it was a preponderating feature of the clinical picture. He also noted that in these cases the infecting organism was always one of high virulence, and that the lesions in the endocardium, as well as those in the pericardium, pleura, joints, and the embolic infarctions were usually suppurative or hemorrhagic in character. In striking contrast to these were those cases which he described as malignant, non-septic, rheumatic endocarditis, where the infecting organism was always of lesser virulence, and where the cardiac condition appeared to

be the most striking feature of the disease. In the latter cases the lesions of the endocardium were never suppurative, the lesions of the pericardium and joints were always serous in type, and the embolic infarctions were always bland, anemic necrotic infarctions. He was unable to decide whether the arthritis which was frequently associated with this type of endocarditis was identical with that of acute articular rheumatism, since in neither type was he able to isolate the causative infecting organism from the joints.

It has long been recognized that the lesions of subacute bacterial endocarditis are usually engrafted on valves which show evidence of old chronic endocarditis lesions, and it has been suspected by many that there must be some more or less intimate relationship between the two conditions. Osler has shown that anatomically there is no essential difference, excepting in degree, between the small excrescences which readily undergo organization and shrinkage with anatomical and clinical recovery, and the large verrucous vegetations which progress and suppurate until the whole of the involved valve is destroyed. However, many observers have thought that because in benign rheumatic endocarditis the most frequent outcome was that of organization and healing with comparatively little ultimate change in the valve, whereas in subacute bacterial endocarditis there was always progression and usually extreme involvement of the valve, and ultimately death of the patient, the two conditions must be etiologically distinct; and this view has been supported by the fact that rarely was one able to establish a bacterial cause for benign rheumatic endocarditis, whereas in subacute bacterial endocarditis a characteristic organism has nearly always been found in the blood of the patient.

The recent work of Libman has greatly increased our knowledge of this interesting disease. In a large series of cases of subacute and chronic bacterial endocarditis he found twenty-one in which he was unable to demonstrate any bacteria in the blood. In some of these cases repeated blood cultures were made (in one case, eleven), all of which proved to be negative. Seventeen of his cases came to autopsy and it was found that although the anatomical diagnosis was undoubtedly subacute or chronic bacterial endocarditis, no living bacteria could be identified in smears, or isolated in cultures from the vegetations upon the heart valves. In some of the cases there was distinct evidence of healing in the anatomical sense although the lesions were so severe as to preclude a healing or recovery in the clinical sense. Libman concludes from these findings that it is possible for cases of bacterial endocarditis to pass through the bacterial stage of the disease to a bacteria-free stage, and that they may even progress to healing and recovery from a pathological point of view. He does not draw analogy between this process and that of healing with clinical recovery which occurs so frequently in simple rheumatic endocarditis, but it seems quite probable that such an analogy does exist, and that the two processes are essentially identical.

Recent development in our knowledge of the bacterial cause of acute rheumatic fever and of rheumatic endocarditis appear to bear out this idea. The isolation and identification of the *diplococcus rheumaticus* by Poynton and Payne established a definite advance towards the solution of the etiology of these conditions, even though their findings could not be uniformly confirmed by themselves or by other observers. Many bacteriologists have recognized the striking resemblance which exists between this organism and that which is isolated from the blood in cases of subacute bacterial endocarditis (the *streptococcus viridans*), and Major has shown that there are no essential cultural differences between them. Rose now has recently succeeded in isolating bacteria in pure culture from the lesions and blood of several cases of articular and muscular rheumatism, and in producing similar lesions in rabbits by the inoculation of these organisms. He found that in cases in which no muscular lesions were evident, the infecting organism was either a long chain streptococcus or a micrococcus, while in cases where muscular involvement was present, the infecting organism was a diplococcus. He found that if he inoculated rabbits with either of the first two types of bacteria, the long chain streptococcus or the micrococcus, he was able to produce arthritis, endocarditis and pericarditis, but rarely myocarditis and never myositis, whereas if he inoculated rabbits with the third form, the diplococcus, he always obtained arthritis, pericarditis and endocarditis, and also myocarditis and myositis. He also found that by means of various methods of culture and animal passage it is possible to cause the mutation of any one of these types of bacteria into any of the others, and that various foreign strains of streptococci may be made to assume the same characteristics. He therefore concludes that under certain conditions various types of streptococci may undergo changes in the body by which they acquire new features which give them an affinity for joints, endocardium, pericardium and myocardium, and he calls attention to the fact that the tonsils, sinuses, appendix, gums and decayed teeth all afford ideal conditions for this process of mutation.

Subacute bacterial endocarditis is a disease which is characterized by insidious onset, irregular fever, which may be low or subnormal but it is often septic in character and accompanied by chills, general malaise, progressive weakness and progressive anemia. There is nearly always cough, the sputum is frequently blood-stained, and there may be night sweats. Gastro-intestinal disturbances and headaches are frequent. Painful nodules, often erythematous in character, occur in the skin, and petechial hemorrhages and ecchymoses are found in the skin, buccal mucous membrane and conjunctiva. More or less marked jaundice and a peculiar brown pigmentation of the skin, especially of the face, are often seen. The joints are frequently swollen and painful, and usually there is some tenderness over the lower portion of the sternum and more or less precordial pain. The urine contains albumin and casts, and there is often slight hematuria.

In the majority of cases blood culture upon proper media reveals the presence of a small Gram positive coccus which occurs in pairs and in short chains of pairs, and which has been described by various authors as the streptococcus viridans, the streptococcus of endocarditis, etc. In a few cases blood culture has shown a pure growth of the influenza bacillus (Libman).

The disease is almost invariably fatal. The duration varies from a few weeks to several years perhaps a decade or more. Death occurs from cardiac decompensation, from embolism into the brain or other organs, or from nephritis and uremia.

At autopsy cardiac lesions are constant and are usually confined to the left side of the heart. Larger or smaller masses of vegetations are deposited on the mitral or aortic valves and among the chordae tendinae. When the mitral valves are involved the vegetations frequently extend to the walls of the left auricle, and when the aortic valves are involved they extend over the interventricular septum and over the ventricular surface of the large flap of the mitral valve. There is rarely much actual destruction of the valves, and the vegetations are firm and fleshy. There is frequently an adhesive pericarditis and the myocardium shows a fatty degeneration and proliferation of the interstitial connective tissue in many cases.

The spleen is usually enlarged and frequently shows single or multiple anemic necrotic infarctions. The substance of the spleen is firm, and the Malpighian bodies are often larger than normal.

The kidneys are large and pale, and frequently show numerous small hemorrhages beneath the capsule and through the cortex. Anemic necrotic infarctions are frequent. There is marked parenchymatous and fatty degeneration of the tubular epithelium, and frequently a peculiar type of proliferative glomerulo-nephritis which Baehr and Libman believe to be pathognomonic of the disease.

The appearance of the liver and of the lungs depends chiefly upon the degree of cardiac decompensation, although the lungs frequently show multiple hemorrhages and hemorrhagic infarctions.

Hemorrhages are often found in the kidneys, lungs, gastro-intestinal mucous membrane, meninges, skin and conjunctiva, and occasionally in the periosteum and bone marrow. Embolic infarctions are frequent in the kidneys, spleen, lungs and heart muscle, and local disturbances of circulation due to emboli are often found in the skin, brain, and various other portions of the body.

The mediastinal and retroperitoneal lymph nodes, and the lymph follicles of the intestines are frequently enlarged.

The insidious onset, and the indefinite character of the early symptoms of subacute bacterial endocarditis often make an early diagnosis extremely difficult. In some cases the previous history of the patient may suggest the possibility of cardiac disease, but in a fairly large proportion of the

cases there is nothing in the history to suggest its presence.

In our series of cases three gave a history of a single attack of articular rheumatism and one of recurrent attacks within a period ranging from four to twenty years. Three of the cases had had recurrent attacks of tonsillitis since childhood, and one had been told fourteen years previously that he had heart trouble. Three of the cases gave a history of dyspnea and palpitation after exercise since childhood, and one had had recurrent attacks of dyspnea, once associated with swelling of the feet and brownish patches in the skin, which occurred after his periodical debauches. In one there was a history of chills and fever following an induced abortion; and in one of chills and fever during a septic infection of the finger. But in six of our cases there was nothing in the previous history that would give any clue to diagnosis. In three of these there was a history of syphilis and gonorrhea, but in the other three there was no record of any previous infection.

Among the earliest symptoms of the condition are dyspnea, gastro-intestinal disturbances, weakness, headache, indefinite pains in the joints, cough and night sweats. In several of our cases no definite order of onset of the symptoms could be determined, but in four there was a history of weakness and of indisposition for work for several weeks before more definite symptoms became evident. In seven cases the gastro-intestinal symptoms were prominent. In one of these nothing else was complained of, and in another the "indigestion" and loss of appetite preceded all other symptoms for about six weeks. In one case the terminal illness began as an acute gastro-intestinal disturbance with severe cramps and persistent diarrhea, but it is doubtful whether this attack was a manifestation of the terminal infection, since the patient was living in a lumber camp where there was an epidemic of dysentery at the time. Had it not been that this patient had had recurrent attacks of dyspnea during the previous eight years we might have thought it to be one of those cases where the entrance of the infecting organism was through ulcers in the mucous membrane of the large intestine.

In several of the cases cough was an important early symptom, and in several there was also early hemoptysis and night sweats. The importance of this combination of symptoms with dyspnea, weakness and loss of weight is emphasized by the fact that two of our patients had been told that they were suffering from pulmonary tuberculosis. The differential diagnosis in a third case was complicated by the fact that he did have pulmonary tuberculosis, and that there were numerous acid-fast bacilli in the sputum, but clinically the evidences of the pulmonary condition were overshadowed by those of cardiac involvement, and in addition the blood culture revealed the presence of the characteristic diplostreptococcus, and autopsy confirmed the diagnosis of bacterial endocarditis.

In five of the cases the onset was characterized by chills and fever with accompanying headache,

nausea, anorexia and weakness, and several of these patients believed they were suffering from malaria. The fact that the disease may simulate malaria should be remembered, especially in those portions of the country where malaria is prevalent. One of our cases is especially interesting because it demonstrates that the two conditions may co-exist. This patient, who had a well marked aortic insufficiency and from whom we obtained a positive blood culture, was admitted to the hospital on two occasions, complaining of chills and fever. On the first admission estivo-autumnal plasmodia were found in the blood smear, and on the second admission the tertian malaria was found. This patient improved rapidly upon the administration of quinine, and was discharged from the hospital in a fairly good condition. Unfortunately he passed from our view and we have not been able to learn the outcome of the bacterial endocarditis. In the later stages of the disease chills and fever are very common and seem to be associated with the showering of emboli into the blood stream. They were observed in thirteen of our cases.

Fever is an early and almost constant accompaniment of the disease. In six of our cases it was septic in character, in two it was continuously high, in three it was irregular, in three it was low, and in two the temperature was subnormal. In Libman's cases of the bacteria-free stage of the disease the temperature was usually low, although even in these cases it was occasionally high and accompanied by chills, and appeared to be dependent upon the liberation of showers of emboli into the circulation.

Physical examination reveals evidences of cardiac valvular insufficiency, the signs and symptoms depending upon the valves which are affected. In only one of our cases were cardiac murmurs absent, and the reason for their absence was clearly shown at autopsy to be due to the peculiar size and shape of the vegetations on the heart valves. As the disease progresses there are increasing evidences of cardiac decompensation, and tachycardia and arrhythmias are the rule. More or less marked edema and anasarca are usually found towards the end.

The early appearance of painful erythematous nodules in the skin was first noted by Osler to be characteristic of the disease. The majority of authors have found them in a large percentage of cases, but they were noted in only two of our series. However, their appearance is one of the most important *early* signs of the disease as they appear to be pathognomonic. They are characteristic, small, indurated nodules in the skin, often reddish in color, moderately painful and freely movable. They appear suddenly, gradually increase in size, and then gradually disappear, and are probably due to embolic bunches of bacteria which lodge in the capillaries of the skin.

The occurrence of petechial hemorrhages in the skin and mucous membranes, and also in the conjunctiva, especially of the lower lid, is practically diagnostic. They may occur early but usually appear later in the disease. They frequently appear in successive crops and often are seen soon after

a violent chill. They are probably caused by minute emboli which are lodged in the smaller vessels. Petechiae in the skin were observed in six of our cases, and in the conjunctiva of the lower lids in two.

There is frequently jaundice which may appear quite early, but the stools do not show evidence of biliary obstruction.

The changes in the blood are striking and quite characteristic. There is a rapidly progressive anemia which may become extreme. In one of our cases the Hb. fell from 92% to 39% (Sahli) within two months and the RBC count diminished from 5,125,000 to 2,250,000 during the same time. In fourteen of the cases the Hb. was 60% or lower. The changes in the leukocyte count vary considerably. In two of the cases there was a marked leucopenia, 3,200 and 3,300 respectively, and in three of the cases there was a marked leukocytosis, 30,000, 32,000 and 50,000 respectively. In the majority of cases, however, the count varied between normal and 15,000; in only five did it rise above 15,000. In one case, in which we recovered the bacteria from the blood during life and from the bone marrow and heart valves at autopsy, numerous myelocytes were found in the blood, and the patient showed other characteristics of spleno-myelogenous leukemia.

The urine shows evidence of early involvement of the kidneys. Albumin and casts appear early and usually there is an early appearance of red blood cells in the sediment. Sometimes the blood is present in sufficient quantity to give a smoky appearance to the urine. Frequently the urine contains Gram positive diplococci, which are apparently identical with those found in the blood serum. The presence of these bacteria in the urine may be of aid in diagnosis. In one of our cases the persistent presence of diplococci in the urine was one of the important signs upon which diagnosis was based, when repeated blood cultures proved negative, and there were no physical signs of valvular involvement.

There are frequently more or less marked nervous manifestations. The patients are usually restless and irritable, they frequently sleep badly and are apprehensive of approaching death. In some cases there is muttering delirium, and occasionally coma. In one of our cases the coma appeared to be associated with embolus in one of the cerebral arteries, but in another case it was evidently of uremic origin. In two of our cases there was hemiplegia, and in one a right-sided paresis. The former were due to embolism into the middle cerebral artery, but the latter was the result of a pachymeningitis interna hemorrhagica which caused pressure on the motor area of the left cerebrum.

We have already referred to the importance of blood culture in establishing the diagnosis of this condition. Many observers insist that diagnosis is not justified unless the blood culture be positive, but with these we cannot agree. Blood cultures were made in sixteen of our cases, and were found positive in ten. Among these ten were the three fatal cases in which autopsy was not per-

mitted and the two improved cases which were discharged from the hospital. In one of our cases in which blood culture was negative, repeated examinations were made, and in each of four others two examinations were made. Yet in all our cases which came to autopsy, including the six in which we were unable to obtain positive blood cultures, the characteristic Gram positive diplostreptococci were found in the vegetations on the heart valves. In all the negative cases the blood was incubated in extract broth and in blood agar plates. It is possible that had we made more frequent examinations, or had we used different culture media, we might have obtained a larger percentage of positive results, since in our later work when we have used the culture media which Rosenow has recommended, we have been more uniformly successful. However, the fact remains that in several of our cases which were clinically cases of bacterial endocarditis and where the autopsy findings confirmed the diagnosis, we were unable to obtain positive blood cultures during life. In the majority of cases when the culture was taken immediately after clinical evidence of embolism, a positive result was obtained, but in one case where there were recurrent crops of petechiae in the skin the blood culture was always negative. None of our negative cases conformed with those described by Libman, where at autopsy the cardiac lesions were free from living bacteria, but our findings confirm his conclusions that there may be stages in the disease, the so-called bacteria-free stage, during which the bacteria cannot be demonstrated by blood culture.

The duration of the process cannot be definitely determined at the present time. In the majority of cases the time which elapses after the beginning of the terminal acute illness does not exceed a few weeks or months. In our series two patients died within one month, ten between three and seven months, one in one year and one in two years after the beginning of the terminal illness. But in five of our cases there was a definite history of cardiac disease for from eight to fifteen years before the onset of the terminal illness, and in three the beginning of the terminal illness was characterized only by an exaggeration and persistence of symptoms which had been present during that time. With our present knowledge of the disease we are unable to say whether the onset of the terminal illness indicates a new infection or whether it is simply an exacerbation of an old chronic or quiescent infective process of the heart valves. Rosenow believes that at least in the majority of cases the onset or the more acute symptoms of the terminal illness is dependent upon re-infection of valves which are especially susceptible to emboli because the vascularity which has developed during the healing from the previous infection. However, in those of our cases in which definite symptoms had been present for many years and in which the terminal illness was ushered in by mere exacerbation of these previous symptoms, it does not seem probable that the terminal process was dependent upon reinfection. It seems much more probable that it indicates a

flaring up of the infective process which had previously involved the heart valves.

The prognosis of diagnosed cases of bacterial endocarditis is bad. Libman has reviewed the reported cases in which clinical recovery took place and they are very few in number. However the fact that he has been able to demonstrate a series of fatal cases in which there was evidence of local healing of the cardiac lesions even though the damage to the heart was such that clinical recovery was not possible, suggests that there may be cases in which the local healing occurs sufficiently early to enable clinical recovery to take place. If it is true that the condition which we diagnose as sub-acute or chronic bacterial endocarditis is a specific disease, but few if any cases recover, but if on the other hand it merely represents the more virulent manifestations of the process which we ordinarily define as benign rheumatic endocarditis, the majority of cases remain undiagnosed because they recover. Careful observation of large numbers of cases can alone establish the exact relationship which exists between the two conditions.

In conclusion, we would emphasize the importance of certain manifestations by which an early diagnosis can be made. The majority of the early symptoms are indefinite in character because of the relatively low virulence of the invading organism, and even in the late stages the condition may resemble tuberculosis or malaria. But in the painful nodules in the skin, in the occurrence of petechial hemorrhages in the skin, and especially in the mucous membrane of the mouth and in the conjunctiva; in the presence of Gram positive diplococci in the urine when local cause for them can be excluded; and finally in the demonstration of the characteristic diplostreptococcus in the blood, we have a series of signs by which a positive diagnosis of the condition can be made.

SUMMARY OF CASES.

Case I. (Pr.) Male, age 38, editor.—The patient complained of weakness, fever and headache. He first noticed that he tired easily, had much headache and a slight fever and that there were painful nodules in the scalp. There was no history of acute rheumatism, tonsillitis or other acute infection. There was little gastro-intestinal disturbance, slight cough, no sputum and no jaundice. The A.C.D. was slightly increased, but no cardiac murmurs were heard. The pulse rate varied from 72 to 100 per minute. The liver and spleen were palpable. There were no joint symptoms. The temperature ranged from 98° to 105° F. and was septic in character. There were frequent chills. The patient was very irritable and almost hysterical at times.

The R.B.C. fell from 4,000,000 to 2,500,000 in four months and the Hb. from 85% to 60%. The leukocytes varied between 6,000 and 14,000. Repeated blood cultures were negative. The urine contained albumin and casts, and many small Gram + cocci occurring in pairs. Death occurred about four months after the initial symptoms.

Autopsy.—The heart was about one and a half times normal size and showed thick, fleshy vegetations on the aortic and mitral valves. There was some myocardial degeneration. The spleen was enlarged, the liver congested and the kidneys were large and pale. Small Gram + cocci occurring in pairs and in short chains of pairs were isolated from the vegetations on the heart valves.

Case II. (1070-11) Male, age 29, chauffeur.—September 6, 1911, the patient entered the hospital complaining of "heart trouble." Four months previous he had an attack of "la grippe," and was ill for one week. He worked for one month afterwards, but did not feel well. He was weak and had attacks of palpitation. He entered the Peninsula Hotel at Palo Alto where he remained for five weeks before coming to Lane Hospital. He had had a good deal of precordial pain during the past ten days and had profuse sweats in the early morning. There had been some fever but no chills, no cough and no expectoration. The appetite had been poor, there had been some distress after eating, and constipation.

The patient gave a history of acute rheumatic fever when nine years of age, but had never been sick since. No history of other acute illness was noted.

The patient was pale and anemic, the tongue was coated and the pharynx injected. There was dulness and absence of breath sounds in both bases behind, the dulness reaching the level of the X.D.V. The A.C.D. was much increased and there was a diffuse visible precordial pulsation. At the apex was a long systolic murmur which was heard in the axilla. At the aortic area the same murmur was heard and there was also a short diastolic murmur which replaced the second sound. The pulmonary second sound was accentuated. The liver and spleen were palpable and tender. The patient was given autogenous vaccination but died on September 27, 1914.

The temperature was continuously high, between 100° and 102° F. There were no chills while the patient was in the hospital. The pulse ran between 108 and 120. The urine on admission was normal. The R.B.C. dropped from 3,600,000 to 2,750,000 and the Hb. from 68% to 55% (Sahli) in three weeks. The W.B.C. varied between 10,800 and 14,600. Blood culture was positive.

Autopsy.—The heart was about three times normal size, and showed vegetations on the aortic and mitral valves and among the chordae tendinae. There was an aneurysm of the large flap of the mitral valve. The liver was large and cyanotic. The lungs showed brown induration and hemorrhages. The spleen was large and contained multiple anemic necrotic infarctions. The kidneys contained multiple infarctions and showed glomerulo-nephritis. There were hemorrhages in the lungs, kidneys and bowels, and an embolus in the artery supplying the tip of the nose. Gram+ cocci occurring in pairs and in chains of pairs were isolated from the heart lesions, and from the infarctions in the spleen.

Case III. (988-11) Male, age 38, seaman, Feb. 15, 1911.—The patient entered the outpatient department complaining of "liver and stomach trouble." Two weeks before he had a dull pain in the region of the stomach and his right side was sore. His appetite was poor, he was bloated and distressed after eating and was frequently nauseated. There was no vomiting. He had lost eight pounds weight in three weeks. There was some cough and bloody sputum.

He gave a history of syphilis thirteen years previously. There was no history of other acute infectious disease.

The patient was fairly well nourished, but was cachectic and slightly jaundiced. The tongue was coated and the pharynx was injected. There were numerous moist rales in the base of the left lung. The A.C.D. was increased. A to-and-fro murmur was heard at the aortic area and also at the apex. The pulse was of the Corrigan type, and there was a definite capillary pulsation. The liver and spleen were enlarged and tender. There were numerous brown patches on the shins, and irregularities along the crests of the shin bones. The

Wassermann reaction was positive. The patient improved on antileptic treatment.

August 17, 1911.—The patient returned to the clinic. He had been in the City and County Hospital during the summer. There was marked edema, the liver was tender and there were numerous purpuric patches on the chest. He was admitted to the hospital. There was marked general anasarca, and the heart and liver were larger than before. He gradually became weaker and died Sept. 1, 1913. The temperature was usually below 99° F. although for a few days it ranged between 99° and 102°. No chills or sweats were noted. The pulse ran from 70 to 120 per minute. The urine was clear in February, but in August contained much albumin and many hyaline and granular casts. The R.B.C. were always above 4,000,000 but the Hb. fell from 85% to 60% (Sahli). Blood culture was not made.

Autopsy.—The heart was about three times normal size and showed vegetations in the aortic cusps and thrombosis in the right auricular appendix. The liver was of normal size and cyanotic. The lungs showed brown induration and hemorrhagic infarctions. The spleen was larger than normal. Gram+ cocci occurring in pairs and in chains of pairs were isolated from the lesions on the heart valves.

Case IV. (Pr.) Female, age 32, not married.—The patient complained of weakness, shortness of breath and pains in the joints. She first noticed weakness, cough, gastro-intestinal disturbance and shortness of breath one year previously, but the symptoms had all been more severe during the past three months. There was no history of previous acute infectious disease of any kind.

The heart was enlarged, the apical impulse was forcible, and there were signs of aortic and mitral insufficiency. The rate varied between 90 and 120, and there were many premature contractions. The liver and spleen were enlarged. The knees were painful and there was marked precordial pain. There was marked tenderness over a nodule which developed in the lumbar region. There was some headache, the patient was extremely nervous and restless, and suffered much from insomnia. There was persistent hiccough and inability to swallow towards the end. The temperature was irregular, running between 97.8° and 102° F., but dropped suddenly to 96.8° after the administration of autogenous vaccine. The urine showed albumin and casts. The Hb. was 60% (Sahli) and the leukocytes numbered 6200. Blood culture was positive.

Death occurred about one year after the initial symptoms. Autopsy was not permitted.

Case V. (9274) Male, age 20, plumber, Nov. 24, 1913.—The patient entered the hospital complaining of shortness of breath. Three months before he began to feel "run down." One month later he noticed a heavy feeling in the epigastrium and began to be short of breath. This became progressively worse and six weeks before admission he had to stop work. There had been a good deal of cough, and, during the past ten days, some edema.

The patient had three attacks of rheumatism in 1897, 1904 and 1908. He had scarlet fever in 1909. He had occasional headaches, frequent cough without sputum, and occasional palpitation. There was never precordial pain or swelling of the feet. The patient was markedly cyanotic, dyspneic and orthopneic, and slightly jaundiced. There were numerous small red spots (hemorrhages) under the conjunctiva of the lower lids. The teeth were well kept, the tongue was coated, and the right tonsil enlarged. There was impaired resonance over both bases and moist and snoring rales in both lungs. There was a friction rub in the right axilla. The A.C.D. was increased and there was a diffuse heaving precordial impulse. There was a loud systolic and a faint presystolic murmur

heard best at the apex, and a loud diastolic murmur heard best at the fourth left costal cartilage. The liver was large and tender. The spleen was not felt. There was some cough and some hemoptysis. The urine showed a trace of albumin and some hyaline and granular casts. The R.B.C. numbered 4,376,000, the W.B.C. from 10,000 to 12,800, and the Hb. 80%. Blood culture was positive. The temperature was usually subnormal while the patient was under observation. The pulse varied from 80 to 120.

The patient left the hospital on Dec. 3, 1913, and he died at home on Feb. 16, 1914. There is no record of his condition during the interval.

Autopsy.—The heart was between two and three times normal size. There was extreme mitral stenosis and the aortic cusps were thickened and short. The chordae tendinae were thickened. The precordium was adherent. The liver showed extreme cyanotic atrophy. The lungs showed brown induration and multiple small hemorrhagic infarctions. There were small hemorrhages in the pelvis of the kidneys.

Case VI. (Pr.) Female, age 25, married.—The patient had had "heart trouble" since childhood. She had developed well and felt well, but had short attacks of palpitation after exercise. There was no history of any acute illness of any kind. The terminal illness began gradually with progressive weakness, persistence of palpitation and some fever. There was marked dyspnea and some cyanosis. The temperature ranged from 97.8° to 103° and there were slight chills during the terminal illness. There was slight headache and some nausea at times. Cough was persistent, and there was a small amount of sputum. There was some jaundice. The heart was markedly enlarged and showed signs of aortic and mitral insufficiency. The pulse varied from 80 to 120. The liver and spleen were enlarged and tender, and there was dull precordial pain. There was edema of the legs and back, and some ascites. The joints were not involved. The urine showed albumin and casts towards the end. The leukocytes varied from 18,000 to 25,000, and the Hb. measured 60%. Blood culture was positive, and autogenous vaccination was tried without benefit. Death occurred about six weeks after the onset of the terminal illness. Autopsy was not permitted.

Case VII. (Pr.) Female, age, 27, married.—The patient complained of pain in the knees, shoulders and hands, weakness and loss of appetite. The terminal illness began during pregnancy. There was a history of frequent attacks of tonsillitis and bronchitis since childhood, and of attacks of palpitation and shortness of breath during the night for twelve years. There was never any joint trouble until the terminal illness. There was progressive weakness and loss of weight since the beginning of pregnancy, six months before. There was some headache and dizziness and marked dyspnea, orthopnea and cyanosis. The heart was enlarged. There was evidence of mitral and aortic insufficiency and the pulse rate was always above 100. The liver and spleen were not felt. There was some edema of legs. The urine contained much albumin and many hyaline and granular casts. The red blood corpuscles numbered 3,120,000, the white blood cells 13,400, and the Hb. measured 55%. Blood culture was positive. The patient died several days after Caesarian section had been performed, about six months after the beginning of the terminal illness, and twelve years after the onset of the earliest symptoms. Autopsy was not permitted.

Case VIII. (7176-12) Male, age 33, hospital orderly, April 15, 1912.—The patient entered the hospital complaining of pain in the ankles. Four months before he had an infected finger and had chills and fever. The temperature reached 103° F. and the patient thought he had malaria. In

January he began to feel weak, lost his appetite, had pains in the abdomen and was constipated. Two weeks before admission he had night sweats, cough and expectoration. He had fever every afternoon, and had lost twenty-five pounds in three months. Three days before admission he noticed swelling of the feet. There had been considerable headache and frequent nycturia. There was increasingly frequent palpitation.

There was a history of furunculosis ten years previously and of typhoid fever five years before. There was no history of other acute infectious diseases.

The patient was pale and anemic. There was no impairment of the lungs. The A.C.D. was increased, there was a systolic murmur at the apex, and a to-and-fro murmur heard best at the aortic area. The pulse was 90 per minute, and of the Corrigan type. The liver and spleen were palpable.

The patient remained under observation for three months. The temperature was septic in character and there were frequent chills and night sweats. The pulse remained below 100 per minute until just before death, when it reached 160. There was fairly severe headache, and much precordial pain. There was acute pain in the splenic region (infarction) about four days before death. There was no joint involvement. The urine showed much albumin, many red blood corpuscles, and many granular and hyaline casts. The red blood corpuscles fell from 3,800,000 to 2,400,000 and the Hb. from 56% to 48% (Sahli). The leukocytes varied between 3,200 and 7,800. Blood culture was negative in two examinations. Death occurred July 16th about six months after the initial symptoms.

Autopsy.—The heart was about one and one-half times normal size and showed thick vegetations on the aortic valves, with extension over the posterior surface of the large flap of the mitral valve. There was calcification and aneurysm formation of the aortic cusps. The liver and spleen were large and the spleen contained a septic infarction. There were many minute hemorrhages in the kidneys, and there was marked subacute and chronic glomerulo-nephritis. There was an abscess in the posterior mediastinum and fibrino-purulent pleurisy on the left side. There were many small hemorrhages in the dura. Small Gram+ cocci occurring in pairs and in short chains of pairs were isolated from the lesions on the heart valves, and from the pericardium and the splenic infarction.

Case IX. (11754-12) Male, age 34, Nov. 7, 1912.—The patient entered the hospital, complaining of weakness, headache and chills. For seven weeks he had not felt like working. The chills and fever had occurred every second day. There had been some nausea and vomiting and some palpitation.

The patient gave a history of hard and soft chancre and of gonorrhea eleven years before, and of "consumption of the throat" when a boy. When he was twenty years old he was transferred from the infantry to the hospital corps of the Austrian army because he had "heart trouble." He was well developed but moderately anemic. The heart was enlarged, there was a presystolic thrill over the P.M.I. and a presystolic rumble ending in a loud booming sound was heard at the apex. At the base the aortic second sound was replaced by a murmur. The liver was not enlarged, but the spleen was palpable. The urine showed a trace of albumin but no casts. The blood contained 2,950,000 red blood cells, 4,800 white blood cells, and the Hb. was 46% Sahli. Blood culture was positive. Smear of the blood showed many plasmodia and crescents of the estivo-autumnal malaria.

The patient improved rapidly under quinine administration and was discharged improved.

On July 18, 1913, the patient returned to the

hospital complaining of chills and fever. His general condition was much improved. The red blood corpuscles were 4,625,000, the white blood corpuscles 8,800, and the Hb. 90% Sahli. The liver was enlarged, and the spleen still palpable. Blood culture was not made on this admission. The blood film showed numerous plasmodia of the tertian malaria, and the patient again improved under the administration of quinine. The cardiac signs were the same as on previous examination.

Case X. (6684-12) Female, age 24, married, January 4, 1912.—The patient entered the hospital. She had been in poor health since an induced abortion one and one-half years previously. At the time of the abortion she had chills and fever and four months after had acute articular rheumatism. There had been recurrent attacks of rheumatism since. She had two attacks of "malaria" (chills and fever) before the abortion, and had always had chills and fever when she had acute rheumatism in the joints. Six days after admission for the gynecological clinic she underwent operation, her complaint being leucorrhea and pain in the lower part of the abdomen (curetage and laparotomy) and on the following day developed a rise in temperature. On the eighth day there was a severe chill and a temperature of 102°. The patient developed a typical attack of acute articular rheumatism with involvement of the endocardium, which ran a fairly mild course. She was discharged from the hospital on February 28th.

On June 23, 1913, the patient was brought to the hospital in an ambulance. She had felt well and gained in weight until about June first. There was loss in appetite, pain in praecordium and swelling of hands and feet. She became markedly dyspneic. There was dullness in the left chest as high as the nipple. The heart was much enlarged, and there was a systolic murmur at the P.M.I. which was transmitted to the axilla, and accentuation of the pulmonic second sound. The liver was large and tender and the spleen was palpable. There was marked edema of the lower extremities. The pulse varied from 60 to 130, and the temperature from 97° to 102°. Chills occurred almost daily. There were severe headaches and much sweating. On the first admission the urine contained no albumin or casts, but on the last admission there was much albumin and many hyaline and granular casts. On the first admission the R.B.C. numbered 4,350,000, the W.B.C. 12,000, and the Hb. 58%, and on the second admission the R.B.C. 4,000,000, the W.B.C. 54,700, and the Hb. 37%. Blood culture was not made.

The patient died on June 27th, about two years after the onset of symptoms. Preceding death there was a dark discoloration of the dorsum and of the toes of the left foot.

Autopsy.—The heart was one and one-half times normal size, and showed punctate hemorrhages in the pericardium and vegetations on the mitral valves, extending to the wall of the left auricle, the interventricular septum and the chordae tendinae. The liver was enlarged and showed fatty degeneration and cyanotic atrophy. The lungs showed brown induration and hemorrhages in the pleura. The spleen was enlarged, and contained old and recent anemic necrotic infarctions. The kidneys showed recent and old anemic necrotic infarctions, numerous small hemorrhages, glomerulo nephritis, and an embolus in a branch of the renal artery. There was an embolus in the middle cerebral artery with softening of the thalamus opticus, and in other small foci. There was an embolus in the anterior tibial artery of the left leg. Smears and cultures from the valvular vegetations showed Gram+ cocci occurring in pairs and in short chains of pairs.

Case XI. (1680) Male, age 37, fisherman.—On March 25, 1913, the patient came to the clinic complaining of chills and fever. Three weeks pre-

viously he had been seized with dizzy spells, and during the following night had a severe chill and fever. There had been four or five chills since. He had had "malaria" twenty years before, a soft chancre one year before and gonorrhea six times. There were no other acute infectious diseases. On admission he was well developed but anemic and emaciated. The teeth were poorly kept, and the tonsils reddened. The tongue was coated. There was dullness in the left base and bubbling rales and friction sounds in the left axilla. The A.C.D. was not increased. A loud systolic murmur was heard over the whole precordium. The liver was not enlarged but there was marked tenderness in the upper part of the abdomen. The spleen was palpable and there was a general glandular enlargement in the superficial lymph nodes. On March 28th there was bloody sputum in which acid fast bacilli were found. On April 2d the patient developed a right-sided hemiplegia, and on April 3d he died. The urine showed albumin and casts. The red blood corpuscles numbered 4,900,000, the white blood corpuscles 18,000, and the Hb. was 90%. Blood culture and Wassermann reaction were negative. The temperature ranged from 100° to 104°, and chills and sweats occurred almost daily. The pulse varied between 75 and 110. The patient suffered much from headache, and was restless and irritable. Coma ensued with the hemiplegia.

Autopsy.—The heart was very large and showed extensive vegetations on the large flap of the mitral valve, with extension over the wall of the auricle. At the base of the mitral valve was a perforation through which the vegetations extended to and caused a perforation of the aortic cup.

The liver was enlarged. The spleen was large and contained multiple and recent anemic necrotic infarctions. The kidneys contained recent anemic necrotic infarctions. There was a purulent meningitis and embolus in the left middle cerebral artery, with cerebral softening. There were no hemorrhages and no edema.

Case XII. (Pr.) Female, married.—During labor the patient was seized with a severe chill followed by high fever. Following delivery the temperature ranged from 101° to 103° F. There were daily chills. Blood culture showed a pure growth of "short chain streptococcus." On the ninth day there was some cyanosis and a soft systolic murmur was heard at the aortic area. On the tenth day the shoulder became painful and the arm was swollen. The patient died on the thirtieth day. No previous history could be obtained. The blood showed 4,000,000 red blood corpuscles, 13,400 white blood corpuscles, and 85% Hb. Autogenous vaccine was administered.

Autopsy.—There was massive new vegetation on the mitral valve which was deposited on an old fibrinous base. The aorta contained a large thrombus at the bifurcation. The spleen was enlarged and contained an abscess. Thrombi were found in the splenic and hepatic arteries. There were large anemic necrotic infarctions in both kidneys.

Case XIII. (1923) Male, lineman, April 1, 1913.—The patient entered the hospital complaining of shortness of breath. About four months previously he had "chills and fever" which he thought was malaria. About five weeks previously he began to cough at night and to have pain in the chest along the lower part of the sternum. For two or three weeks there had been dyspnea and palpitations and swelling of the ankles. Eleven years previously the patient had a painful swelling in the left knee which lasted for four weeks. There was no other history of acute infection.

On admission there was marked dyspnea, orthopnea and cyanosis. There was marked pyorrhea alveolaris, and the tongue was coated. There was dullness in the right base. The heart was en-

larged and there was a rough systolic blow at the apex which was transmitted to the axilla. The liver was palpable and tender. The spleen was not felt. There was definite ascites and edema of both legs. There was much blood-stained sputum. The urine contained albumin and hyaline and granular casts. The blood showed 2,700,000 red blood corpuscles, 30,400 white blood corpuscles, and 55% Hb. (Sahli). Blood culture was positive. The temperature varied from 97° to 102° and the pulse ran between 100 and 120. On April 3d the patient died.

Autopsy.—The heart was enlarged, and showed vegetations on the aortic and mitral valves and on the interventricular septum. The aortic valves were ruptured. The liver was large and showed passive congestion. The spleen was large. There was marked general anasarca.

Case XIV. (8992) Male, age 52, laborer, Nov. 14, 1913.—The patient came to the clinic complaining of weakness, shortness of breath and diarrhea. His illness began three months previously with some cramps in the abdomen and profuse diarrhea. Two weeks later he was seized with chills and fever and severe sweats, which lasted about two weeks. At this time there was cough and much expectoration. During the past two weeks the legs were swollen and covered with brownish blotches.

The previous history was negative excepting that the patient had palpitation and shortness of breath after a debauch eight years before and again five years before, and that in April, 1913, the legs became swollen and covered with blotches. There was no history of acute rheumatism or of tonsillitis.

The patient was strongly built, moderately dyspneic and cyanotic. The tongue was coated and there was marked pyorrhea alveolaris. The pharynx was red. There was some dullness and fine rales in both lungs behind at the bases. The A.C.D. was increased. There was a systolic thrill at apex and presystolic, systolic and diastolic murmurs heard at apex and at the third left intercostal space. The liver was much enlarged, and the spleen extended 17 cm. below the costal margin. Both were very tender. There was edema of both legs and petechial hemorrhages on both thighs and legs. On November 2d there were hemorrhages from the bowel and two days later there were many petechiae on the right side. On December 2d there were bright red papules on the forehead and in the conjunctiva. The patient was delirious and in coma at times. On admission the red blood corpuscles numbered 4,049,000, the white blood corpuscles 3,330, and the Hb. was 60%. Before death the white blood corpuscles rose to 10,400. Blood cultures taken on two occasions were negative. Wassermann reaction was positive. The urine showed much albumin, many hyaline and granular casts and many small Gram+ diplococci. The temperature ranged from 95° to 101.6°, and was septic at times. There were many chills and many sweats.

The patient died on December 16th.

Autopsy.—The heart was twice normal size and showed vegetations on the mitral valve. The aortic cusps were rough and one of them was perforated. The liver was large. There was an old tuberculous focus in the left lung. The spleen was very large and contained a peculiar gelatinous mass in the upper pole. The kidneys were hemorrhagic, and in the right was an anemic necrotic infarction. There was marked glomerulonephritis. Numerous Gram+ cocci occurring in pairs and in short chains of pairs were isolated from the heart valves and spleen.

Case XV. (15687-13) Male, age 33, electrician, March 13, 1913.—The patient entered the hospital complaining of shortness of breath and swelling of the ankles. He had always been short of breath

on exertion since the age of fifteen when he had articular rheumatism. He was able to work until eighteen months before admission. He first noticed a gradual increase of dyspnea, much palpitation and pains and distress after eating. Later his ankles began to swell.

On admission he was moderately anemic. The teeth were well kept, but the tongue was coated and the tonsils were reddened. There was dullness and diminished breath sounds in both bases. The A.C.D. was increased and there was a short thrill over the apex. There was a presystolic murmur at the apex and some irregularity in rhythm. The liver and spleen were not enlarged. There was some jaundice. On April 4th he was dismissed improved, after administration of digitalis.

April 22, 1913.—The patient returned to the hospital. He was moderately dyspneic and jaundiced. The heart rate was 140 and irregular, the pulse rate was 70. There was marked pulsation of the liver. On April 28th there was hemoptysis and about May 1st persistent diarrhea. He gradually failed, and on July 5th was markedly edematous. On July 17th there were numerous ecchymoses on the legs and body. He died July 18, 1913.

The temperature was never above 99° F., the pulse rarely above 100, although there was frequently marked irregularity of the heart with premature contractions which did not reach the radial. There were no chills and no sweats. The blood showed 4,600,000 red blood corpuscles, 8,200 white blood corpuscles, and 80% Hb. (Sahli). Two blood cultures and the Wassermann reactions were negative.

Autopsy.—The heart was large and showed an old calcified stenosis of the mitral valve and thickening of the aortic cusps. There were small, recent vegetations on the mitral. The liver was large and cyanotic. The spleen was not enlarged. There was marked enlargement of the mediastinal and peritoneal lymph nodes. Small Gram+ cocci occurring in pairs and in short chains of pairs were isolated from the vegetations on the heart valves.

Case XVI. (14774-13) Female, age 30, married, Feb. 10, 1913.—The patient entered the hospital complaining of indigestion and shortness of breath. Three months previously she had begun to have "indigestion" with loss of appetite, distress after eating and much flatus. Six weeks later there was severe epigastric pain lasting about fifteen hours. Since that time she had been short of breath, especially on lying down or after exertion, and had palpitation and profuse sweating in the early morning. There was frequent nycturia, some cough and some hemoptysis.

The patient had tonsillitis at intervals since the age of sixteen, but never severely. No other acute infectious diseases were noted. On examination the patient was found to be anemic, the teeth were well kept, the tongue was coated and the tonsils were hypertrophied. There was definite impairment of the right apex. The A.C.D. was increased. A blowing systolic murmur was heard over the whole precordium but was most intense in the mitral area and was transmitted to the back. The liver and spleen were not enlarged, and there was no abdominal tenderness.

The patient apparently improved until March 5th when after some exercise she had severe chill with marked palpitation and dyspnea. She died March 7, 1913.

The temperature was irregular, running between 97° and 102° F. There were no chills excepting the one on March 5th. Sweating was profuse—usually in the early morning. There was fairly severe headache. The urine showed a faint trace of albumin but no casts. The blood showed 3,304,000 red blood corpuscles, from 8,400 to 12,250 white blood corpuscles, and 55% Hb. Blood culture was negative on two occasions.

Autopsy.—The heart was about one and one-half times normal size, and showed vegetations along the edges of the mitral valve, on the wall of the left auricle, and among the chordae tendinae. The spleen was enlarged and contained an anemic necrotic infarction. The kidneys also contained infarctions. Cultures and smears from the vegetations showed small Gram+ cocci occurring in pairs and in chains of pairs.

Case XVII. (9514) Male, age 60, laborer, Dec. 9, 1913.—The patient was admitted to the hospital complaining of headache and rheumatism. He "caught cold" in October, and since had had bad headaches. About the same time there was pain and stiffness in the shoulders and left elbow. One month before admission there had been a diffuse blood-red rash over the back and chest which came suddenly and gradually disappeared. He had lost twenty pounds weight in five weeks.

The patient gave a history of three attacks of "malaria," the last in 1907. He had syphilis in 1884. No other acute infectious diseases were noted. He had had some shortness of breath for three years and frequent nycturia for two years.

The patient was poorly nourished and anemic. The teeth were poorly preserved and there were marked pyorrhea alveolaris. The tongue was coated and the left tonsil was enlarged. There was dullness and bronchial breathing over the left lung, and some impairment at the right apex. The A.C.D. was slightly increased to the right, there was a faint systolic blow at the apex which was not heard in the axilla, and there was a slight pericardial rub at the base. The liver and spleen were not enlarged or tender. There was some limitation of movement and tenderness in the shoulders. In the skin of the trunk were numerous discrete indurated papules, varying in size from a pinhead to a pea. (Sections showed them to be leukemic in character.) The superficial lymph nodes were enlarged.

The patient became comatose on December 15th. There had been severe headache and oliguria previously. He improved under active uremia treatments. On January 13th there was hemoptysis. On January 15th there were fresh petechiae in the skin and the spleen was palpable. On January 18th and 19th there were more petechiae and ecchymoses, and the patient became semi-comatose. On January 29th there was right-sided paresis and dusky discoloration and loss of temperature in the left foot and right hand. The patient died January 31st.

The urine showed albumin and casts. The blood showed a rapidly progressing anemia—the red blood corpuscles falling from 5,125,000 to 2,250,000 and the Hb. from 92% Sahli to 39% Sahli. The leukocytes varied from 17,680 to 30,000 and contained many myelocytes. Blood culture was positive.

Autopsy.—The heart was of normal size, and showed small recent vegetations on the mitral and aortic valves. Similar vegetations covered several atheromatous patches in the aorta. The liver was small, and contained many myelocytes in the pulp. Hemorrhages were found in the skin, periosteum, bone marrow, kidneys and pericardium. There was a marked pachymeningitis interna hemorrhagica which had caused the compression and paresis. The superficial and deep lymph nodes were markedly enlarged.

Small Gram+ cocci occurring in pairs and in short chains of pairs were isolated from the vegetations on the heart valves, and from the bone marrow.

Case XVIII. (7121) Male, age 25, salesman.—On Sept. 17, 1913, the patient entered the outpatient department complaining of shortness of breath. His illness began one year previously with cough which lasted three months, sputum which was blood streaked and shortness of breath on exer-

tion. He had had frequent headaches and night sweats and had lost in weight.

He gave a history of gonorrhea four years previously, and of a carbuncle in the neck eight years previously. There was no history of other acute infections. He entered the hospital Dec. 1st.

The patient was poorly nourished, very anemic and sallow. The tongue was coated, there was marked pyorrhea alveolaris and the tonsils were red. There were numerous moist rales in the bases of both lungs. The A.C.D. was slightly increased, and there was a presystolic and systolic murmur at the mitral area, and a systolic murmur at the base. The liver and spleen were not felt. The temperature was subnormal most of the time. The pulse was usually below 60 when the patient was in bed. The urine showed nothing abnormal. The blood contained 4,540,000 red blood corpuscles, 10,600 white blood corpuscles, and 60% Hb. Blood culture was positive.

The patient insisted on leaving the hospital and has not since been seen.

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MEDICAL HOSPITAL BOOKKEEPING.*

By WM. R. DORR, M. D., San Francisco.

This short paper is intended to bring before you some of the shortcomings of the medical profession in keeping medical records of their patients, especially in their hospital work, and also to suggest how the present methods of most hospitals may be augmented to the mutual benefit of the doctor, the hospital and especially the patient.

We find to-day that the great majority of successful medical practitioners have adopted some more or less complete system of keeping track of the financial obligations of their patients and that they are more or less systematic in keeping this record up to date and that they are willing to hire other people to help them. This is for the very obvious reason that they see an immediate financial benefit to themselves resulting from this method. Yet how many of these same men keep a complete and accurate medical record of their cases, that is, one that could be referred to a few years afterwards and give a true and complete record of all the medical findings?

Hospital medical histories are perhaps better than those kept personally by the medical man for in these we at least have a complete record of when the patient was admitted, when discharged, what the final diagnosis was, when operated on and an accurate record of symptoms, pulse, respiration, temperature, medication, nourishment, laboratory findings, etc., kept in an exhaustive manner by the

*Read before the San Francisco County Medical Society.

nurse, and if not extremely full and complete most caustically criticized by the attending doctor.

With, however, this fair start for a good history how few do we find with anything showing more than the findings of the intern? These notes as a rule have not even been read by the attending doctor and although they *may* be accurate they are frequently far from a proper record. In fact, we find many medical men even going so far as to state to the intern that no history is necessary and unless the rules of the hospital demanded it there would be absolutely no medical history and even with the rules there is frequently no history worth mentioning.

This condition has inspired a recent writer in one of the journals to make the following statement: "Case histories, as at present kept in most of our hospitals, are practically worthless. There is no competent supervision of the work and the case history often has no earthly relation to the diagnosis found at the head of the history sheet. Proper instruction in history taking should be given the house staff." This supervision of histories should be done by the attending doctor in order to have his histories of value to himself, to the hospital and last but really most important of all, to the patient especially in his or her future treatment. It is frequently sufficient for the immediate treatment of a case that the attending doctor remembers his findings at the time but he cannot possibly remember them a year or two years hence and the patient may be the sufferer.

It is not intended however that this paper should simply criticize present methods of keeping histories in the majority of hospitals of to-day. Nor is it intended simply to place the blame of these poor histories on the attending doctors, and not, where it is generally placed, on the interne. In fact the above condition is only mentioned for the reason that better histories are necessary before we can go forward into a field of increased usefulness to the patient. And it is this field of increased usefulness that I especially wish to bring before you.

The relation between the patients, the medical profession and the hospitals has been a constantly changing relation. Originally hospitals were used more or less as places to go only as a last resort. To-day they are being used more and more as places to go to obtain all of the latest knowledge and apparatus for the proper diagnosing and treatment of all diseases. Should not the hospital of the future aim to get beyond this stage and become also an active agent in assisting the patients to not only get well but to keep well?

We therefore believe that all hospitals, public as well as private, charitable as well as commercial, should not consider their histories complete when the patient is discharged nor should they consider their interest in the patient ended at that time but should adopt some scheme of keeping in touch with their patrons and keeping informed as to their condition, which would not only be beneficial to the patient but also to the hospital and also the doctor.

The modern hospital has adopted methods of

cost accounting and is willing to spend money on clerical salaries in order to keep track of where its money has been expended, also to see where it can collect more money and also to see by comparison with other hospitals where it can save money. But should not the hospital of today besides having a detailed system of financial accounting also have a detailed system of medical accounting which, although demanding considerable expense, would in the end, I believe, not only pay the patient but also the doctor and the hospital.

One method of doing this has been recently most enthusiastically advocated by Dr. Codman of Boston. Through his efforts the Massachusetts General Hospital has adopted a systematic scheme of following up all cases after their discharge from the hospital which even in the very short time that it has been in use has shown that really this is one of the most valuable parts of the history of the cases as it shows what the hospital has really done for the patient.

Dr. Codman presented this scheme of increasing the field of the hospital at the Clinical Congress of Surgeons of which he was the chairman of the Committee on the Standardization of Hospitals and also presented the same proposition at the last meeting of the American Hospital Association. At both of these meetings his plan was most enthusiastically approved.

Several months ago at St. Luke's Hospital Dr. Sherman requested that all cases that had been treated by him during a certain period be written to and asked what their physical condition had been since leaving the hospital. About 40% of the letters were answered and the answers were, to say the least, most interesting both from a medical standpoint and also from the hospital standpoint.

The interesting data that was collected from these few cases mentioned above and the interest shown in this matter by the Clinical Congress of Surgeons and the American Hospital Association has prompted St. Luke's Hospital to adopt the system of sending a letter to each patient six months after their discharge from the hospital asking them how they have been from a medical standpoint since leaving and return their reply in an enclosed stamped envelope. This will, however, not be done until the consent of the doctor who treated the case is obtained and then they will be as carefully and systematically followed up as the unpaid accounts are followed up at present by the cashier.

In conclusion I wish to say that this system of following up patients may off-hand seem to be a very trivial matter about which to present a paper to this society, but I feel sure that all of you who think this matter over and realize the large amount of information that will be derived from this procedure will agree with me that it is one way that the hospitals have of increasing their usefulness to the community and that it should be adopted by all hospitals.

Discussion.

Dr. Harry M. Sherman: The discussion of Dr. Dorr's paper may be begun, so far as I am con-

cerned, by saying that the replies to my postcard inquiries reported all sorts of conditions, from wholly satisfactory to wholly unsatisfactory, and I am inclined to think that those which reported unsatisfactory conditions, while the more disappointing, were the more instructive.

Now Codman of Boston, in inaugurating the "follow-up" system referred to, was working at the Massachusetts General Hospital, a free hospital with a definite staff, and where no one may do any medical or surgical work except the appointees upon the staff. In dividing the work they have adopted a rather unusual plan, for they give to one man all the cases of a certain kind that come to the hospital, and he has them for a year to study and treat in the hope that he may be able to find some new point or fact out of the mass of material. For instance, this last year Codman himself was studying particularly that very trite subject—chronic appendicitis; another year he will have some other subject assigned to him; and with this system it is impossible that there shall be a total failure of the production of some new knowledge or some new method. On the other hand, in the semi-private hospital sanatoria that we have here in San Francisco, it is obvious at a glance that no such system is possible. At St. Luke's Hospital, where I am a member of the staff, the majority of the patients are sent in by physicians on the outside who, as patrons of the hospital, have access to and the privileges of the wards and operating rooms. There can be, under these circumstances, no systematic work of any kind. We have many different men treating many different cases in many different ways, and that is all.

Dr. Dorr has said that some of the voluntary attendants at St. Luke's have expressed themselves at being perfectly willing that there should be no record of any kind kept of the patient, and when we see that the record of a patient under such circumstances would be merely an isolated statement of a single patient which could contribute in no way to any mass of material in the form of statistics, it is obvious that there is no real reason for writing such a history. This, however, would be more from the standpoint of the physician than of the patient, for if a physician does not care for that kind of self-instruction which he gets by writing down his patient's symptoms, his diagnosis, and his reason for a method of treatment, the history taken by the interne can be of no value to him. But, on the other hand, a proper history of a patient treated in the hospital must be of value to the hospital. The hospital has an interest in the method of treatment and in the result of every patient it receives, no matter whether it be a hospital free patient in the ward, a hospital pay patient, a private patient of a member of the staff, or a private patient of a physician not on the staff; and it is only by proper histories that the hospital can tell what the many men practicing there are doing with their patients, and it is only by a "follow-up" system that the hospital can tell what is the real result for humanity as the reward of the investment and the labor of maintaining the hospital. For if a patient goes to the hospital for treatment, leaves the hospital with a mere case record of being improved or cured, but relapses to the original condition within a short while after leaving the hospital, the hospital's time and money, the patient's time and money, and the physician's time have all been wasted. The only way such a waste can be stopped is to know exactly how it occurs and why. That will only be possible when the "follow-up" system is combined with proper histories of the patients in the hospital, whether they are treated by members of the staff or by physicians and surgeons not on the staff.

Now there are two investigations of the hospitals of the country imminent. One is to be made under the direction of the Clinical Congress of

the Surgeons of North America, and the committee of which Codman is chairman will be the committee that will do this. The other investigation will, I am told, be taken up by the Carnegie Foundation, but I do not know the details of the intention.

When A. Flexner was investigating the schools of this country and Canada for the Carnegie Foundation, his first inquiry on going to a school was to ask for records of the medical clinic; for the medical clinic is the heart of the whole institution and into it every patient of importance eventually finds his way, no matter what other clinic he may first go to. He wanted to see not only how the histories were kept in the medical clinic, but he wanted also to see what were the cross references between the medical clinic and the other clinics. If he found that the records were poor or that there were none in the medical clinic, his interest in that institution ceased.

When the Committee of the Clinical Congress goes to visit a hospital to inspect it and give it a rating, the first questions that the visitors ask will be: "Let us see the history files. Show us how the histories are kept." And if they find that no histories are kept or the histories are kept badly, that institution will have a very low rating in spite of its possible possession of an imposing plant and its ample patronage by well-to-do people; so that the hospital is interested in having just as definite a system of bookkeeping regarding its patients as it has regarding the money expenditure in the office, for the patients, cured or not cured, helped or not helped, are the real output of the hospital, and no one can expect that money will be given to hospitals for the foundation of free beds and the final establishment of a big eleemosynary institution if there cannot be a definite showing of what is gotten for the investment of money given.

T. Gaillard Thomas, the famous gynecologist of New York, among whose assistants I was at one time counted, used to tell us: "Always write histories of all your patients. It is very unlikely that you will ever read them after having written them; it is very certain that nobody else will ever read them; but the act of writing them will be of inestimable value to you." For many years I thought this was true, but I find myself constantly going back more and more to re-reading old histories, histories of patients whom I treated twenty-five years ago here in San Francisco—so that I am re-reading my own old histories and finding much to learn in doing it. I commend the writing of histories and the reading of histories to all who wish to follow out a most efficient method of self-instruction which will benefit not only the writer but also the patient and the hospital.

LEUKOCYTIC EXTRACT IN THE TREATMENT OF PNEUMOCOCCUS INFECTIONS IN RABBITS.

By MR. ARTHUR MEINHARD and H. B. REYNOLDS, M. D., Palo Alto.

As a result of the original work of Hiss, and Hiss and Zinszer² with leukocytic extract (Hiss) in various infections in rabbits, one of us has used this product in the treatment of various infections. Among these were nine cases of pneumonia constituting the most seriously ill of a group of some thirty pneumonias.¹ None of these cases died. Stimulated by these results, Meinhard has further investigated the subject through the medium of artificially produced pneumococcus infection in rabbits. Some of these experiments have been un-

dertaken for the purpose of verifying the results of other workers. Others have aimed to throw light on the mode of action.

The pneumococcus used in these experiments was a strain obtained from the Cutter Laboratories. The medium was the veal-infusion glucose calcium carbonate broth recommended by Hirschfelder for keeping the virulence of a pneumococcus strain constant. The culture was transplanted every day to at least two tubes of this broth; one tube being used for the animal injections and the other tube being kept as a control on the culture.

Experiment 1. Seven rabbits were inoculated with increasing doses of the culture to determine the minimum fatal dose.

Rabbit	Weight	Dose of Pneumococcus	Result
1	1260 Grams	2 cc.	Dead in 3 days
2	1250 Grams	1½ cc.	Dead in 3 days
3	1247 Grams	1 cc.	Dead in 3 days
4	1225 Grams	½ cc.	Dead in 3½ days
5	1215 Grams	¼ cc.	Recovered in 5 days
6	1200 Grams	1/10 cc.	Recovered in 5 days
7	1200 Grams	1/20 cc.	Recovered in 5 days

One-half cc. was the fatal dose. In fatal cases the animals lived three days. Our culture was therefore less virulent than that used by Hiss and Zinsser and consequently more suitable for experiments intended to parallel human infections. In all subsequent experiments 2 cc. of the culture or four times the fatal dose was used to produce the infections in the treated animals.

Experiment 2:

Rabbit	Weight	Pneumococcus.	Leuk. Ext.	Result
8	1360 Grams	2 cc.	¼ cc.	Dead in 3½ days
9	1320 Grams	2 cc.	½ cc.	Dead in 5 days
10	1300 Grams	2 cc.	1 cc.	Dead in 7 days
11	1300 Grams	2 cc.	1½ cc.	Recovered in 5 days
12	1297 Grams	2 cc.	2 cc.	Recovered in 5 days
13	1284 Grams	2 cc.	2½ cc.	Recovered in 3 days

Of these animals, all those died that received a protective dose of less than 1.5 cc. Those receiving 1.5 cc. or more recovered completely, by which we mean that they were free from temperature, were of normal attitude and activity, and ate their food as did normal animals, and were used

later for other experiments not associated with this investigation.

It will be noted that the animals dying of the infection lived longer under the protection of even small doses of extract than did the animals in experiment 1 even though the latter received in part smaller doses of pneumococcus. Furthermore there is a directly proportionate ratio between the dose of leukocytic extract and length of life; thus,

¼ cc. prolonged life to 3½ days.

½ cc. prolonged life to 5 days.

1 cc. prolonged life to 7 days.

The minimum dose bringing about recovery was 1.5 cc. This dosage was used in the following experiments. The dosage was approximately 1/800th of the body weight, the animals receiving the largest dose 1/500th of the body weight being in no way appreciably hurt by the extract.

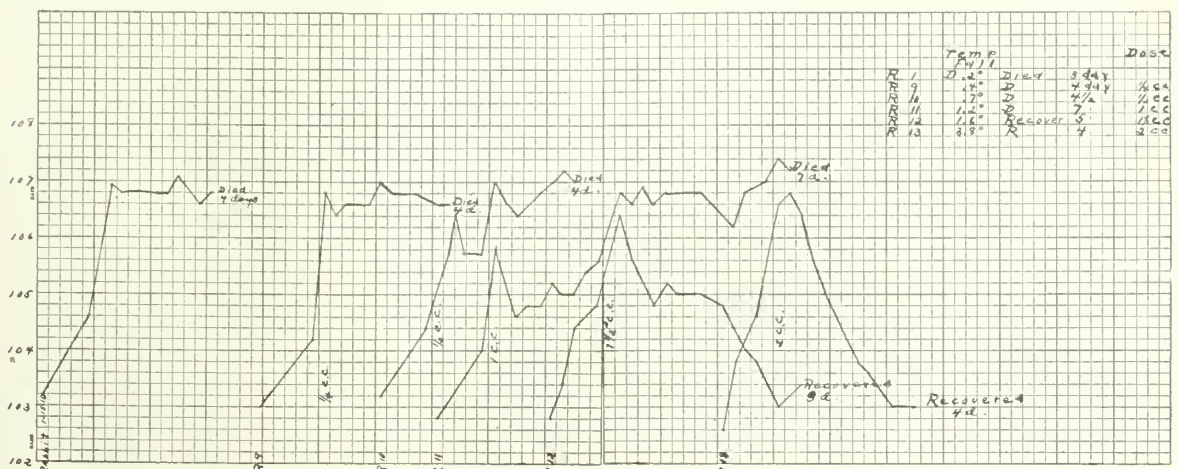
Experiment 3.

To determine the result in a series of cases when injected with the minimum protective dose of leukocytic extract, 24 hours after infection. The two largest rabbits were reserved as controls, receiving no leukocytic extract.

Rabbit	Weight	Pneumococcus.	Leuk. Ext.	Result
14	1380 Grams	2 cc.	none	Dead in 4 days.
15	1360 Grams	2 cc.	none	Dead in 4 days.
16	1340 Grams	2 cc.	1½ cc.	Recovered in 5 days.
17	1300 Grams	2 cc.	1½ cc.	Recovered in 5 days.
18	1280 Grams	2 cc.	1½ cc.	Recovered in 5 days.
19	1034 Grams	2 cc.	1½ cc.	Recovered in 8 days.
20	992 Grams	2 cc.	1½ cc.	Dead in 8 days.

The animals were sufficiently protected by this dosage in all but one case, recovering in from five to eight days. The smallest rabbit, No. 20, 992 grams, lived 8 days.

Temperature charts were kept on all these treated animals as well as the controls, and a study of these fever curves is very interesting as showing an almost mathematical relation between the dosage of leukocytic extract and the amount of fall in the fever. On the following temperature blanks are charted for comparison: (1) the composite temperature line of three control animals (rabbits 1, 14, 15), each receiving two cc. of culture; (2) the individual temperature curves of rabbits 8, 9, 10, 11 and 12, receiving increasingly large doses of leukocytic extract.



Rabbits 1, 14, 15, untreated, died in a little over three days and practically no fall in temperature occurred at any time. Rabbit 8 received only $\frac{1}{4}$ cc. of leukocytic extract and yet his primary fall in fever was greater than in the case of any of the untreated animals and he lived longer than any of them. Rabbit 9 received twice as large a dose as did rabbit 8 and had twice the fall in fever and lived several hours longer. Rabbit 10 received twice the dose of the preceding animal and had still greater fall in temperature and lived three days longer. Rabbit 11 received a curative dose. His fall in temperature was practically uninterrupted to a normal line and he was well in five days. Rabbit 12 received a dose one-third larger than did rabbit 11, had a sharper fall in temperature and was well one day earlier.

This series is most convincing evidence of the curative effect of rabbit leukocytes on rabbit infections.

Experiment 4.

To determine the protection afforded by the injection of the minimum dose of leukocytic extract, administered 48 hours after infection with fatal dose of pneumococcus.

Rabbit.	Weight.	Pneumococcus.	Leuk. Ext.	Result.
21	1290 Grams	2 cc.	none	Dead in 3½ days.
22	1280 Grams	2 cc.	none	Dead in 3 days.
23	1260 Grams	2 cc.	1½ cc.	Recovered in 9 days.
24	1245 Grams	2 cc.	1½ cc.	Dead in 7 days.
25	1225 Grams	2 cc.	1½ cc.	Dead in 6½ days.

The results were not good, only one animal recovering. The two smaller rabbits were so exhausted by the disease as to be beyond help. However life was prolonged by even this late injection to seven and six and one-half days instead of three days as in the case of the controls. Moreover these rabbits lived but three days without treatment and were therefore practically in extremis when receiving the treatment.

Experiment 5.

In experiment 3 the small animal of 992 grams died from his infection. The following animals of unusually small size were injected with two doses of pneumococcus at intervals of 24 and 48 hours respectively to determine whether they could be saved.

Rabbit.	Weight.	Pneumococcus.	Leuk. Ext. 24 hrs.	Leuk. Ext. 48 hrs.	Result.
26	1280 G.	2 cc.	none	none	Dead in 4 days.
27	1265 G.	2 cc.	none	none	Dead in 3½ days.
28	980 G.	2 cc.	1½ cc.	1½ cc.	Recov'd in 6 days.
29	947 G.	2 cc.	1½ cc.	1½ cc.	Recov'd in 6 days.
30	930 G.	2 cc.	1½ cc.	1½ cc.	Recov'd in 9 days.
31	900 G.	2 cc.	1½ cc.	1½ cc.	Recov'd in 7 days.
32	870 G.	2 cc.	1½ cc.	1½ cc.	Recov'd in 9 days.

Both control animals, though rabbits of comparatively large size, died of their infection in 4 and 3½ days.

All other animals recovered in from 6 to 9 days though infected with more than five times a fatal dose of pneumococcus.

Experiment 6.

This experiment was done to determine the effect of antiseptics upon the action of leukocytic extract. A drop of tricresol was added to 10 cc. of the extract and this was used on the rabbits after they had been inoculated with pneumococcus for 24 hours.

Rabbit.	Weight.	Pneumococcus.	Leuk. Ext.	Result.
35	1300 Grams	2 cc.	none	Dead in 3½ days.
36	1305 Grams	2 cc.	none	Dead in 4 days.
37	1260 Grams	2 cc.	1½ cc.	Recovered in 4 days.
38	1200 Grams	2 cc.	1½ cc.	Recovered in 5 days.
39	1120 Grams	2 cc.	1½ cc.	Recovered in 5 days.

This experiment shows that the addition of tricresol to leukocytic extract does not inhibit its action in any way. The control animals died and the other animals recovered as in the experiments where leukocytic extract without antiseptic was used.

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A CASE OF PAROXYSMAL HEMOGLOBINURIA TREATED WITH SALVARSAN WITH DISAPPERANCE OF THE CHARACTERISTIC BLOOD REACTION, AND OF THE POSITIVE WASSERMANN REACTION.*

By WALTER V. BREM, M. D., Los Angeles.

The investigations of Donath and Landsteiner,¹ Eason,² Hoover and Stone,³ Moss,⁴ Cooke,⁵ and others have established the fact that in paroxysmal hemoglobinuria there is a characteristic blood reaction dependent upon a unique autohemolysin of the amboceptor-complement type. All are agreed that amboceptor unites with the corpuscles only at low temperatures, but there is some difference of opinion regarding the temperature at which complement unites with the amboceptor. However, the lytic action of the complement is exerted only after the temperature is raised. The characteristic reaction is, then, that when the blood is chilled to 0 to 5° C and then the temperature is raised to 37° C, there occurs a solution of the corpuscles. This reaction explains the clinical phenomenon that the attacks of hemoglobinuria follow when the patient is exposed to cold. These attacks may be induced at will by immersing portions of the body in ice water for a certain length of time.

A further important feature of the disease is that the blood of a majority of the patients gives a positive Wassermann reaction. Cooke found 37 cases in the literature on which reports of Wassermann test were made, and 33, or 90 per cent., of these tests were positive. Several more positive

*Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

reactions have since been reported. It is significant, perhaps, that the only other conditions in which the peculiar blood reaction above described has been observed are general paresis and tertiary syphilis. Donath and Landsteiner found the test positive in six of 65 cases of general paresis, while Kumagai and Inoue found it positive in seven of 35 cases of tertiary and metasyphilitic disease.⁵ These facts, while suggesting that syphilis is the etiologic factor of the condition, still do not prove it. There are several other diseases, as leprosy and frambesia, in which the Wassermann test is frequently positive, and paroxysmal hemoglobinuria may be still another. Pringsheim⁶ and Lindbom⁷ report temporary cessation of the hemoglobinuria attacks after injections of cholesterin, and Lindbom states that the positive Wassermann reaction became negative.

So far no case of paroxysmal hemoglobinuria has been reported in which antisyphilitic treatment has been carried to the point of changing a positive Wassermann reaction into a negative, with a disappearance of the peculiar blood reaction, but in several the attacks of hemoglobinuria have ceased or been diminished in frequency and intensity.

.5cc. pts. serum + .5cc. pts. corps. 5% susp. + 0°—5° C ½ hr. + 37° C 2 hrs. = Hemolysis ++
 .5cc. normal serum Group IV + .5cc. pts. corps. 5% susp. + 0°—5° C ½ hr. + 37° C 2 hrs. = Hemolysis 0
 .5cc. pts. serum + .2cc. pts. corps. 5% susp. + 0°—5° C ½ hr. + 37° C 1 hr. = Hemolysis ++
 .5cc. pts. serum + .2cc. pts. corps. 5% susp. + 37° C 1 hr. = Hemolysis 0

Case report: Feb. 14, 1913. The patient was a Hungarian man 40 years old. He had had a venereal ulcer nine or ten years ago; this was followed by sore throat, a skin rash, and the loss of about 15 pounds in weight. He took medicine about one year, but did not know what kind. During this time he began to have pain in the left hypochondrium. The pain would last from three days to one week, and then there would be a remission. It was absent during one period of a year and a half. The pain was made worse by eating, but there was no vomiting. It has not increased in severity or frequency. He has been constipated, there have been no tarry stools. The appetite, on the whole, has been good and the patient eats anything. He became pale about two years ago, and in December 1912 he was jaundiced. He has had no chronic cough and has never spit blood.

A little over one year ago, during the winter, he began having chilly feelings, was hot afterward, and passed bloody urine. This continued every day for a week or two. During the present winter he has had two similar attacks, each lasting two or three days, and each attack followed exposure and chilling. (He was seen in one of these attacks by Dr. Thos. McHugh, of San Bernardino, who kindly tells me that the urine was the typical blackwater urine of hemoglobinuria.)

Physical examination: The patient is a well nourished man of medium height and weighs about 160 pounds. He is pale, sallow, and the sclerotics are muddy. He has the appearance of the blackwater fever patients of malarial regions. The pupils are equal and react to light and during accommodation the fundi are normal. The lungs are clear on percussion and auscultation. The heart dulness reaches 8 cm. to the left and the sounds are normal. The abdomen is held rather rigidly, veins are visible in the flanks. Liver. Very much enlarged, flatness begins in the fourth interspace in the parasternal line, 5th in the mammary line, 5th in the axillary line; vertical dulness is 15 cm. in the parasternal line, 21 cm. in the axillary line; the edge can not be defi-

nately felt. Spleen. Enlarged; the edge is hard and is palpable 5 cm. below the costal margin; flatness extends high in the axilla; there is slight tenderness on palpation.

The patellar reflexes are exaggerated on both sides. The finger nails are curved.

Blood:

Hemoglobin	48%
Red blood corpuscles.....	4,320,000
Color index.....	.56
Leukocytes	7,300

There is some irregularity in the size of the corpuscles, but no marked poikilocytosis, no uncleated red corpuscles seen, no blood parasites.

Urine.—Yellow, clear, acid, sp. gr. 1024, albumin very faint trace, no sugar, no bile. The microscopic examination shows a few epithelial cells and leukocytes, many mucous threads, and one hyaline cast.

Stool.—Negative for blood, pus, ova, amebas, and other parasites.

Wassermann test.—Strongly positive. Reaction +++.

Classification of blood. Group IV (Moss).

Paroxysmal hemoglobinuric blood reaction. Positive. Controls negative.

Cerebrospinal fluid.—About 7 cc. of clear fluid was withdrawn, pressure did not appear to be in-

creased. Cell count: 2 mononuclears per 1 c.mm. Butyric acid test: Positive. Reaction ++. Wassermann test: Positive. 0.4 cc. completely fixes 1 unit of complement. (0.1 cc. of 10% guinea pig serum.)

Feb. 18, 1913—1st Salvarsan treatment, .6 G. intravenously. No reaction. The patient was ordered to take mercurial inunctions, and these were alternated with mercury in "mixed treatment," and bichloride by mouth during the treatment. Although he took large quantities of mercury, symptoms of excess were never manifested.

Feb. 21, 1913—Wassermann test positive. A 1-40 dilution of the serum caused complete fixation. Titre not reached.

Feb. 27, 1913—Wassermann test positive. .1 cc. of a 1 to 300 dilution fixes 1 unit of complement.⁸ On standing, the serum decreased rapidly in its power to fix complement, and by March 18, 1913, it required .1 cc. of a 1 to 100 dilution to fix 1 unit.

March 1, 1913—The patient looks better and has gained six pounds; appetite good. Spleen 3 cm. below costal margin. Liver 13 cm. vertical dulness in parasternal line, 16 cm. in mammary line. Edge not felt. No tenderness.

March 10, 1913—2d Salvarsan, 0.6 G. intravenously. No reaction.

March 14, 1913—The spleen is palpable 1 cm. below costal margin; dulness does not reach so high in the axilla. The liver dulness is 12 cm. vertically in the mammary line, and 12 cm. in the axillary line. The patient is feeling and looking greatly improved.

March 27, 1913—Wassermann test positive. 0.1 cc. of a 1-20 dilution fixes 1 unit of complement.

March 29, 1913—3d Salvarsan, 0.6 G. intravenously. No reaction. Hemoglobin 76%. Spleen just palpable at the costal margin. Liver normal.

April 21, 1913—Wassermann test positive. 0.1 cc. of a 1-20 dilution fixes 1 unit of complement. Cerebrospinal fluid: Pressure 120 mm. Cells, none found in 1 c.mm. Butyric acid test, positive.

Reaction ++. Wassermann test, positive, 1.0 cc. completely fixes 1 unit of complement. 4th Salvarsan, 0.6 G. intravenously.

May 9, 1913—Wassermann test positive, 0.1 cc. of a 1-20 dilution fixes 1 unit of complement. 5th Salvarsan, 0.6 G. intravenously. No reaction.

June 14, 1913—Wassermann test positive, 0.1 cc. of a 1-10 dilution fixes 1 unit of complement. 6th Salvarsan, 0.8 G. intravenously. No reaction.

July 12, 1913—Wassermann test positive, 0.1 cc. of a 1-13 dilution fixes 1 unit of complement. Cerebrospinal fluid: Pressure 170 mm. Cells, 7 mononuclears per 1 c.mm. Butyric acid test, positive. Reaction ++. Wassermann test negative, 1.0 cc. produces no fixation with 1 unit of complement. 7th Salvarsan, 0.9 G. intravenously. No reaction.

July 27, 1913—Wassermann test positive, 0.1 cc. of a 1-9 dilution fixes 1 unit of complement. 8th Salvarsan, 0.9 G. intravenously. No reaction.

August 16, 1913—Wassermann test positive, 0.1 cc. of a 1-10 dilution fixes 1 unit of complement. 9th Salvarsan, 0.8 G. intravenously. No reaction.

Nov. 4, 1913—The patient was lost sight of for nearly three months and took no treatment. He is now a robust, healthy-looking man, works hard, and feels perfectly well. Has had no attack of hemoglobinuria since treatment began. Wassermann test positive, 0.1 cc. of a 1-5 dilution fixes 1 unit of complement. Paroxysmal hemoglobinuria reaction of blood negative. 10th Salvarsan, 0.8 G. intravenously. No reaction.

Dec. 4, 1913—11th Salvarsan, 0.8 G. intravenously. No reaction.

Dec. 26, 1913—Wassermann test positive, 0.1 cc. of a 1-5 dilution fixes 1 unit of complement. 12th Salvarsan, 0.8 G. intravenously. No reaction.

Feb. 5, 1914—Wassermann test positive, 0.1 cc. of a 1 to 5 dilution fixes 1 unit of complement. Paroxysmal hemoglobinuria reaction of blood negative. 13th Salvarsan, 0.8 G. intravenously. No reaction.

Feb. 27, 1914—Wassermann test positive, 0.1 cc. of a 1 to 5 dilution fixes 1 unit of complement. 14th Salvarsan, 0.8 G. intravenously. No reaction. Wassermann test negative.

March 25, 1914—Modified Wassermann test suspicious, 0.2 cc. of a 1 to 5 dilution nearly fixes 1 unit of complement. Cerebrospinal fluid: Pressure 145 mm. Cells, none seen in 1 c.mm. Butyric acid test, positive. Reaction ++. Wassermann test, negative, 1.0 cc. produces no fixation with 1 unit of complement. 15th Salvarsan, 0.8 G. intravenously. No reaction.

Summary of the Case. The patient was an adult male 40 years old with acquired syphilis, infection having occurred about 10 years previously. He gave a history of having had several attacks of "bloody" urine following chilling during the past 14 or 15 months, and he was seen in one of these attacks by Dr. Thomas McHugh, of San Bernardino. His blood gave the characteristic reaction of paroxysmal hemoglobinuria. The Wassermann test was positive with the blood serum in 1 to 300 dilution. The cerebrospinal fluid gave a positive butyric acid test and positive Wassermann test. The patient was observed over a period of more than 13 months, during which time he was given 15 intravenous injections of Salvarsan in doses of from 0.6 G. to 0.9 G. Mercury also was given. The strength of the Wassermann test diminished rapidly with the first two injections of Salvarsan, and then exceedingly slowly until it became negative before the 15th injection, a suspicious reaction only taking place

when the test was made with a larger quantity of serum in proportion to the complement than is used in the original Wassermann test. The Wassermann test of the cerebrospinal fluid likewise became negative, though the butyric acid test is still positive. The reaction of the blood peculiar to paroxysmal hemoglobinuria also disappeared, and the patient has had no attacks of hemoglobinuria since the treatment was begun. His condition changed rapidly from that of a cachectic person to that of a robust, healthy man.

Discussion of the Case. The intensity of the Wassermann reaction of the serum suggested a relation between it and the paroxysmal hemoglobinuric reaction, and an attempt was made to show such a relation by absorption of the amboceptor concerned in the latter reaction, and then using the serum for the Wassermann test.

Accordingly, to a 1 to 200 dilution of both reactivated and inactivated serum, the patient's washed and centrifugalized corpuscles were added and the tubes placed in ice water for one-half hour. The corpuscles were then centrifugalized out, the serum pipetted off, and Wassermann tests made with both, and with the unabsorbed inactivated serum. The process of absorption of the hemolytic amboceptor had no effect upon the ability of the serum to fix complement in the Wassermann test. It would have been interesting if we could have absorbed the Wassermann "lipotropic" body, and then have tested for the hemolytic amboceptor. It would be interesting, further, to know if the serum in other cases of paroxysmal hemoglobinuria gives such intense reactions in the Wassermann test. In the cases so far reported no titrations of the strength of the reaction are given. There are four cases reported, however, in which the test is said to have been negative.

My own case, while it does not prove an etiologic relationship between syphilis and paroxysmal hemoglobinuria, furnishes additional evidence that such a relationship exists, and it is the only case reported in which either the Wassermann test or the characteristic blood reaction disappeared during antisyphilitic treatment. I do not consider his syphilitic infection entirely eradicated yet, although the two reactions are negative, and shall carry the treatment still further.

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THE STATUS LYMPHATICUS.*

By JOHN MACKENZIE BROWN, M. D., Los Angeles.

The reason for bringing this subject to your attention is the fact of the great number of tonsil and adenoid operations done throughout the country and the number of deaths occurring during, or shortly after, these operations. All, or nearly all, of the deaths are attributed to the status lymphaticus.

How it could be possible for death to occur after so slight an operation as removal of adenoid tissue, or why there exists such a condition generally known as status lymphaticus, is not at all clear. Pathology, laboratory experiments, or literature, past or present, do not seem to have proven anything. The *why* is as unexplained at the present moment as it was at any time in the past.

The status lymphaticus consists, in general, of a hyperplasia of the thymus, thyroid, spleen and lymphatic glands throughout the body, and a hypoplasia of the cardio-vascular system.

The thymus gland—of which I shall speak mainly—varies greatly in size in health and disease, and also varies with the metabolic changes which occur in the individual. Several authorities, in a series of autopsies, in which the status lymphaticus was not the cause of death, have given the average weights found:

New born	8 to 13 grams
1 to 5 years	5 to 23 "
6 to 10 "	14 to 26 "
11 to 15 "	25 to 37 "
16 to 20 "	16 to 25 "
20 to 25 "	12 to 14 "

At the present time it is held by some authorities that the thymus reaches its maximum growth at two years and disappears at puberty; other authorities are just as positive that it reaches its maximum growth at puberty and then recedes. Until this question is definitely settled there will be some difficulty in arriving at a proper understanding of what is the correct size of the thymus in a given case. From statistics we would be inclined to believe that it reaches its maximum at puberty.

Reports on status lymphaticus wherein the thymus alone has been examined, without being weighed or examined microscopically, are not to be given too much credence, as it is possible to have a fairly large-sized gland in a certain individual without evidences of a hyperplasia in it or any of the other organs usually associated with a thymus in this condition.

A careful pathological report should be made in every case of sudden death where the status lymphaticus is suspected. This is especially so in anesthetic cases, in order to demonstrate whether it is the status lymphaticus, the anesthetic, or both.

The Functions of the Thymus Gland. When the gland is removed in the height of its functioning period there is (1) an alteration in the calcium metabolism, causing a hyperplasia of the bones—a condition similar to rachitis; (2) an alteration in the nervous system in such a manner as to produce paresis, motor and sensory; (3) an altera-

tion in the lymphatic system, causing the lymphocytes to decrease. These may increase after transplantation of thymus tissue, or injection of the thymus extract; (4) an hypertrophy of the spleen, thyroid, pancreas and sexual glands, showing that there must be some inter-relationship between the thymus and these glands.

The postmortem changes found in status lymphaticus are (1) persistence of the thymus, or (2) hyperplasia, which may be due to (a) hyperplasia of Hassall's corpuscles, or (b) hyperplasia of Hassall's corpuscles and the lymphatic tissue. Warthin states that any thymus weighing over fifteen grams should be regarded as hyperplastic, and that an increase in thickness is of more importance than increase in any other direction. This weight would seem to us, to be small in the face of the statistics given.

The lymphatic glands of the intestine and mesentery show marked hyperplasia. The spleen shows a hyperplasia of the lymph follicles. The tonsils are hypertrophied to a marked degree, a large adenoid is usually present, and the lingual tonsil is hypertrophied. The tongue is large and flabby. The bone-marrow of the long bones becomes red, and lymphocystosis is very common. Narrowing of the aorta is fairly constant. The thyroid gland is enlarged in fifty per cent. of the cases.

It is believed that the thymus influences the other organs by an internal secretion, and that hyper-secretion produces much the same results as hyper-secretion of the thyroid in Graves's disease.

The Cause of Death. It is not known whether a persistent thymus in itself is the cause of these unexpected fatalities, or whether it is the combination of hyperplastic tissue along with hypoplasia of the cardio-vascular system which is responsible; or, is the whole picture one of some chronic inflammatory reaction produced by the toxins formed elsewhere in the body that gives us the status lymphaticus and some otherwise unaccounted-for deaths?

It is thought that the enlarged thymus causes death in the following ways: (1) Pressure on the trachea; (2) pressure on the heart; (3) pressure on the large vessels; (4) pressure on the nerves, causing paralysis of the heart, or spasm of the glottis; (5) toxins produced by the thymus, causing cardiac paralysis.

Pressure on the trachea seems to lead in reports as a cause of death, and Crotti, Warthin and others have demonstrated beyond a doubt that this *does* occur in a certain percentage of cases, and particularly is this so in children. Most of the cases reported where chloroform had been used as an anesthetic showed cardiac failure first and respiratory failure afterwards, whereas in cases of ether anesthesia death showed respiratory failure first and cardiac failure afterwards; and, further, nearly all the cases of death during anesthesia were chloroform cases. In the cases of ether anesthesia the deaths occurred usually after the anesthesia, or towards the end of a long anesthetic. All anesthetics, general and local, seem to be poorly borne by these subjects, especially with regard to chloroform.

Diagnosis. First:—Adults. Males take on the

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

physical characteristics of the female: namely, absence of hair on the face, sternum and axilla; broadness and roundness of the thighs; long and narrow thorax, small penis and testicles. Females show a reversal in type, or a tendency to acquire masculine characteristics, hair on the face, narrowness of chest, hips and limbs, and a lowering of the voice. They both have a considerable amount of sub-cutaneous fat, enlargement of the spleen, enlargement of the tonsils, cervical glands and tongue.

Emerson calls special attention to the velvety condition of the skin, which is usually of a pale color. Nearly all are blondes. Narrowness and a bowing of the epiglottis was observed by Stork in a considerable number of cases.

Second: Children. Dyspnea of some degree is one of the most constant factors in children with a large thymus. They have a great amount of sub-cutaneous fat, enlargement of the abdomen, enlarged tonsils, adenoids and cervical glands, and especially a large, flabby tongue. This last factor we have been particularly struck with in tonsil and adenoid work in children. They are difficult to anesthetize, difficult to keep anesthetized, rapidly become cyanotic, have respiratory difficulty, their pupils dilate rapidly, and they perspire freely. I believe these symptoms seem to indicate the type of the status lymphaticus. Rachitis is a fairly constant factor in children with this trouble. The physical findings are very hard to detect, unless the thymus is very large. Where light percussion over the manubrium, and particularly one finger's breadth to the left in the angle of Ludovichi emits a dullness there is indication of a large thymus.

The X-ray offers the most in a diagnosis of this condition, particularly in children. The older they are the less assistance it becomes. In every suspected case, however, the X-ray should be used. It might be well to state that excellent results in the treatment of an hypertrophied thymus are reported from the use of X-rays on the gland. Ratchford reports several cases where the thymus was reduced in size and the dyspnea and other symptoms relieved. The thymus may also be reduced by operation and removal of portions of the gland.

In conclusion, in all suspected cases be very careful regarding anesthesia. Gas ether, administered by an expert anesthetist is the best combination, causing the least amount of excitement to the individual. Use the lightest and shortest anesthesia consistent with the work, and work as rapidly as possible. It is the deep, prolonged or interrupted anesthesia that is dangerous in these cases. Under no circumstances use chloroform.

Discussion.

Dr. Hans Barkan, San Francisco. Mentions an autopsy performed by him several years ago on the body of a stocky, well-nourished and developed farmer's boy, ten years old: the boy was of dark complexion, and the very opposite in type to the general appearance of lymphoblastic individuals. Child had broken arm, and died suddenly after a few whiffs of chloroform. Autopsy showed a thymus weighing 26 grains, extending by a long ribbon-like projection over the pericardium, to the

apex of the heart. Retio-peritoneal and all other lymph glands soft, pulpy, markedly enlarged. No signs of pressure on trachea.

Warns against diagnosis of status lymphaticus when thymus only is enlarged: in addition, all the lymphatic structures must show hyperplasia.

Also discussed by Dr. J. J. Kyle, Los Angeles; Dr. Hill Hastings, Los Angeles; Dr. Rodgers, Long Beach; Dr. Horn, San Francisco, and Dr. Welty of San Francisco.

Discussion closed by Dr. Brown.

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THE CONSIDERATION OF NASAL CONDITIONS CAUSING ASTHMA.*

By WILLIAM H. DUDLEY, M. D., Los Angeles.

The fact that the causes of asthma are numerous, often reflex, and in some measure hereditary, renders the study of this disease somewhat complicated, nevertheless quite interesting, inasmuch as in recent years much has been learned which renders its treatment much more satisfactory. It is the purpose of this paper, however, to take up only nasal, post-nasal and accessory sinus conditions, together with the rationale of their operation.

The earliest treatment of asthma, by operation, so far as we are aware, was by Voltolini¹ in 1871, who found after removing polypi from the nose of a patient, the asthmatic seizures with which he had previously been afflicted were relieved; and although with the return of the polypi, the asthmatic seizures returned, their repeated removal brought repeated relief. Following the publication of this and subsequent experiences, nasal treatment of asthma of many kinds was seized upon by rhinologists, and with so many failures, that within ten or fifteen years, this treatment lost much of its prestige, and it was not till some years later that the physiological relations between the nose and bronchi were studied by Dixon and Brodie,² who did much to clear the atmosphere in this direction, and surgeons operated with clearer ideas as to what might be accomplished. The experiments showed that in a section of a small bronchial tube there is a ring of involuntary muscle fiber, and the experiments showed also that its motor nerve supply came from the vagus; for when this nerve is stimulated, the amount of air entering and leaving a lobe of the lung is rapidly cut down; and furthermore, if the bronchial muscle is caused to contract by the administration of pilocarpine or muscarine, the excitation of the vagus produces a dilatation of the bronchus. In reference to the sympathetic, previous experimentation demonstrated that it had no control over the bron-

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chus; which proved that it contained neither dilating or contracting fibers.³ Dixon and Brodie also found that profound general anesthesia caused a paralysis of the nerve endings of the vagus, and it was therefore necessary to use the smallest amount practical in their demonstrations; and after decerebrating the animal, preserving the medulla intact, that no bronchial reflex from sensory cutaneous nerves, the nerves of the stomach, the intestines or the cornea were obtained, but when the mucous membrane of the nose was irritated, a most important reflex was obtained, but this reflex was immediately abolished by section of the vagus. The observers noticed particularly in all these experiments that the upper and posterior portion of the septum was the best area from which to obtain the reflex. These gentlemen found also that unless the animal was decerebrated, the reflex was but moderate, which appeared to show that the hemispheres contained inhibiting nasal reflex centers, so to speak. These facts appear to have led Dr. Samuel West⁴ to state recently, that "it is not the respiratory center in the medulla that is at fault, but some of the higher co-ordinating centers, possibly in close relation with other centers of volitional action, and presumably in the cortex of the brain." These experiments help us to explain why some individuals suffer from asthma who also suffer from nasal disease or irregularities, while others with identical nasal conditions do not. That is, the asthmatics must be subjects of certain cerebral peculiarities, inherited or otherwise, which interfere with the normal inhibitive influence of the hemispheres upon the nasal reflexes. Were this not true, the nasal exciting causes of this form of reflex asthma would operate as regularly as does sneezing follow the usual stimulation of the Schneiderian membrane.

The nasal nerves which transmit the stimulus, to complete this reflex arc, are the first and second branches of the trigeminus, nasal branches from the sphenopalatine ganglion, and the olfactory, distributed as follows: From the first branch of the third nerve, the distribution is to the anterior portion of the nose and septum, the anterior ethmoid cells and the frontal sinus. The second branch to the floor of the nose and maxillary antrum, while the posterior region of the nose, the septum, the posterior ethmoid cells, and the sphenoid sinus are supplied by branches from the sphenopalatine ganglion. The olfactory, the nerve of special sense, according to Brunn,¹⁴ as a very limited area of distribution; being confined to the roof of the nasal cavity, and not extending down farther than to cover the superior turbinate, and perhaps a like distance on the septum.

The particular points in the nose from which the reflex disturbance is most likely to emanate, are difficult to fix. In the experiments referred to made by Dixon and Brodie, they found, as previously stated, that the posterior and upper part of the septum was the most active in the animals experimented upon, but in the human where pathologic processes have acted as exciting causes, it seems rather difficult to fix on any point, especially active, to the exclusion of others. For instance,

Spieß⁵ thinks that the principal point of irritation is the tuberculum septi; points also called by Kayser sexual points, disturbance of which are at times responsible for a severe form of dysmenorrhea, which he quickly relieves by the application of cocaine to the nose. J. N. McKenzie⁶ stated some years ago his belief that the most active spot in the nose, as being probably represented by that portion of the membrane which covered the posterior extremity of the inferior turbinated body, and of the septum immediately opposite; while it will be shown later that relief from most all forms of accessory sinusitis has been followed by relief of reflex asthma.

The pathological conditions the correction of which have been followed by relief from bronchial asthma are numerous. The first discovered, as previously stated, was a polypus. Then it was found that any kind of pressure against sensitive points in individuals predisposed, might prove sufficient to bring on a paroxysm, among which were deflected septa, enlarged turbinatides, or foreign material in the nasal chambers. Perhaps the most common condition acting as cause is that associated with hay fever; so common in fact that the term hay asthma has become an almost synonymous term—in fact, a severe attack of intumescent rhinitis also may be sufficient, so also are septal spurs, as well as inflammation of the accessory sinuses amply sufficient in certain cases. Abbott⁸ of Cleveland has recently reported numerous cases of accessory sinusitis associated with asthma, relieved by treatment of the sinusitis or by operation, and in all of the cases in which there was a relapse of the asthma, there was also a relapse of the sinusitis.

Of the foreign substances found in the nose, the rhinolith is perhaps the most frequent. A case of this nature, in the experience of the writer, was a worker in the manufacture of slates. The dust of the slate had apparently formed a coating over the interior of the nasal spaces, and by the aid of mucus had continued to build up a cast of the cavity, till nasal respiration was well nigh impossible, and his sufferings were still further augmented by the appearance of a rather severe form of bronchial asthma, which was entirely relieved by the quarrying out of the rhinolith. In the post-nasal space, pharyngeal adenoids have been found to produce asthmatic attacks, which have also been relieved by their removal. The role played by the olfactory nerve in the production of asthma, shows that in certain individuals the reflex may produce asthmatic attacks, and that without the mediation of the swollen turbinates. A striking instance of this was seen in the case of a classmate and intimate friend of the writer. He had hardly begun his practice in the state of New Hampshire when he began to be afflicted with sudden and rather severe attacks of bronchial asthma. It was not infrequent that, while out making calls, an attack of such severity would seize him that he was compelled to seek the nearest house on his route, where he would stop till relieved. Consultation with many noted men in this country and abroad brought many

suggestions, with but little relief, and this condition continued till he began to make his calls with a motor car some eight years ago, when he gave up his horses, the emanations from which were, without doubt, the cause of his asthma. It is reported of Trousseau⁹ also, that he always got an attack of spasmodic asthma at the smell of violets.

The question of anaphylaxis in cases where pus remains in the cavities of the sinuses has been discussed somewhat of late, and it opens up some interesting possibilities. Justus Mathews¹⁰ in a recent discussion stated that "it has been proved experimentally that hay fever, and the asthma that accompanies it, that on the introduction of minute quantities of toxalbumen of pollen into the blood of an individual subject to those affections, the symptoms of hay fever and hay asthma appear, while in the normal individual no reaction occurs. The same has been found true of the emanations of animals in the cases of those sensitive to them. The sensitization has undoubtedly taken place by previous entrance of a foreign proteid into the blood by heredity, which is an active factor in both asthma and anaphylaxis. More numerous and more serious are the cases which require the presence of no external irritant to produce the symptoms of asthma, but in which also the symptoms are exactly similar to the anaphylactic reaction. So it is reasonable to assume that in the cases considered as idiopathic asthma, there occurs the entrance of a foreign proteid into the blood in some way not yet demonstrated. It has been found that a foreign proteid capable of sensitizing the individual, and later producing the anaphylactic shock, may result from autolysis of retained placenta or other tissues. The frequency with which retained and altered mucoid and purulent discharges are found in the nostrils or nasal sinuses suggests that here is the site of the production and entrance into the blood of the foreign proteid which produces the anaphylactic reaction in these cases. The quantity of foreign proteid necessary to sensitize the latter to produce anaphylactic reaction in a susceptible individual is so small that the known absorptive powers of the nasal mucous membrane could undoubtedly pass it into the blood under suitable conditions. Moreover, the reaction has been produced experimentally in guinea pigs by the inhalation of animal emanations followed by the injection of serum from animals of the same species." Just how far this hypothesis can be carried out in the etiology of this complex question, would be difficult to state, but it furnishes ample food for thought and investigation.

In reference to accidental causes, Dundas Grant¹¹ quotes Schmiegelow "as having seven cases where asthma was either aggravated when already present, or an attack excited in a free interval." In one case it followed the insufflation of starch and nitrate of silver, another followed for the first time the syringing of the nose with a 1/1000 solution of corrosive sublimate, while in another case the attack was set up by the application of chromic acid to the septum. Certain cases appear also to have been made worse by operation;

the incomplete operation for nasal polypi, for instance, has been known to wake up a quiescent asthma. At times also, the removal of small polypi is followed by relief, while no relief is produced by the removal of a large one. An explanation of this appears to be, that in the case of the removal of the small polypus, the slight movement of the growth by respiration against the septum in a predisposed individual was quite sufficient to provoke an attack, while in the case of the large growth, the asthma was due to some non-nasal cause, or possibly to an associated sinus disease.

In regard to the frequency of nasal causes in asthma, Lubinsky¹⁵ found in a series of 500 cases of asthma, there were nasal pathologic changes in 143; while Becker, Herz and Schmiegelow¹⁵ found in 649 cases of nasal polypi, but 47 cases of asthma. Dundas Grant¹⁶ reported 107 cases of nasal disease associated with asthma; of these 86 were so well marked as to call for operation. Thirty-one had but moderate irregularities, and not calling for operation, one probably due to adenoids, and seven with no irregularities. In 253 cases reported by Lubinsky, Heymann and Schmiegelow,¹⁷ 88 cases were cured and 35 were improved, which in this series leaves a trifle more than one-half unimproved. Justus Mathews¹⁸ reported in 1912, 104 either treated locally or operated; of these 31 were entirely relieved, 32 markedly improved, 19 slightly improved, and 22 unimproved. Of the 104, 26 were associated with diseases of the accessory sinuses, and all but four were either cured of their asthma or relieved to some extent.

In the consideration of the subject of this article, the work has been confined entirely to the nose, nasopharynx and accessory sinuses, while diseases of the oropharynx, especially large and diseased tonsils, are also accredited with their share of causing asthma. In the study of the nasal conditions acting as exciting causes of asthma and their relation to the prognosis and treatment of the same, we must not overlook the one large factor in these cases, namely, a cerebral condition, inherited or otherwise, acting against the inhibiting influence of the brain in the normal individual, which allows a reflex to be transmitted to the bronchi, resulting in a constricting of its circular fibers, resulting in the distressing dyspnea so familiar in these cases. It seems to the writer also that in the pathology of the cases depending upon diseases of the sinuses, in many of the cases, pressure upon sensitive nerve endings of the fifth and other nerves, cannot be accused of exciting the reflex, but we must look for some other connecting link, which anaphylaxis appears to fit better than any other hypothesis at the present time.

Discussion.

Dr. Cullen F. Welty, San Francisco: This is the most thorough paper that I have listened to on this particular subject, and I wish to accentuate every point the doctor has made and say this in addition: In his summary of cases he reports cases as benefited or partially cured. In this particular I wish to make exception, that the case would not have been benefited at all had the

asthma been due to other than nasal affections, and that when we have such cases we are doubly justified in going further with our operative procedures. I maintain that when the pathological processes are entirely removed the case will be entirely well. The same nasal conditions that produce asthma, also produce neuralgia, headache, hay fever, etc. In a publication a few years ago by a medical man, he divided asthma as follows: 60 per cent. to nose, 20 per cent. to poisons and toxemias, and about 20 per cent. to purely medical conditions. This is practically the same that Doctor Dudley has reported.

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THE RELATION OF LOCAL INFECTIONS TO JOINT AFFECTIONS.*

By LEONARD W. ELY, M. D., San Francisco.

In few other branches of medicine is the losing fight of clinical experience against scientific research more evident than in the joint inflammations. The student of medical history will find that until recent years the results of centuries of clinical observation showed that "rheumatism," a clinical entity, embraced all or nearly all cases of arthritis. This rheumatism was due to cold, to overwork, to a run-down condition of the body. It often supervened upon "fevers" and exhausting diseases. It was found in the gouty and in the phthisical, and often followed "sore throat." Lowered resistance enabled it to get a foothold, and the "*locus minoris resistentiae*" determined its abiding place. We recognized acute inflammatory rheumatism, chronic rheumatism, gouty rheumatism and rheumatic gout, scarlatinal rheumatism, gonorrheal rheumatism, syphilitic rheumatism, sciatic rheumatism, and many more. One by one the various constituents of this once protean disease have been identified, described and named, until now rheumatism has come to be restricted almost completely to an acute febrile disease with a well-defined course. The recent discoveries of Rosenow,¹ completing the earlier work of Schüller, Poynton, Paine, and others, and explaining their contradictory findings, indicate that the term soon will become obsolete here also.

Rosenow's work may be summed up briefly as follows: Withdrawing fluid from inflamed ("rheumatic") joints, and using special media, he obtained three types of organisms, with which he produced typical arthritis in rabbits, and obtained pure cultures from these rabbits' joints also. The

astounding part of his revelations was, not that he could vary the virulence of his cultures by animal passage, but that by symbiosis, and by the use of various media, he could change his three types into one another, producing at will a streptococcus viridans, a streptococcus hemolyticus, or a diplococcus not to be distinguished from a pneumococcus. The streptococcus hemolyticus showed a marked predilection for the joints, and but little affinity for the endocardium, the streptococcus viridans a marked predilection for the endocardium, while the diplococcus produced not only an endocarditis and an arthritis, but also a myocarditis and a myositis.

The members of this group of Rosenow's are non-pathogenic under certain circumstances. When found in the mouth they are harmless, but in the deep crypts of the tonsil, or in a deep, decaying tooth socket, or in the seminal vesicles, growing under a low oxygen pressure, as Rosenow expresses it, they may take on pathogenicity. Cold increases the virulence of some; hence the influence of cold in producing "rheumatism."

Here at a stroke, if Rosenow's work be confirmed, a great class of acute and chronic joint affections is shown to be due to a group of cocci which form foci of infection in certain favorite situations of the body, and from these foci affect the joint. A rational and scientific basis of treatment of the resulting arthritides should follow shortly. It must be admitted that in spite of very positive assertions by some investigators, much remains to be discovered along this line. I must confess that I have not achieved results with the mathematical certainty claimed by others, but I am still following the trail enthusiastically, confident that it leads in the right direction. It appears that in many of these cases the cocci have a low grade of virulence, and that when the supply of infection is cut off, the joints recover without further treatment.

Many other forms of arthritis already have been shown to be due to a focus of infection elsewhere in the body.

In some cases of acute suppurative arthritis the relation to a focus is established, in others it is not clear. The suppurative arthritis of scarlatina is what we should expect with the suppurative tonsillitis. Possibly the cases of acute suppurative arthritis whose origin always has been a mystery may be caused by the sudden assumption of toxicity by cocci located in the throat and previously harmless.

The case for typhoid arthritis also is established quite firmly, even though aspiration does not always reveal the presence of typhoid bacilli. The same may be said of gonococcal arthritis. Whether or not certain cases of chronic arthritis may be caused by the domicile of typhoid bacilli in the appendix, gall bladder or lymph nodes remains to be determined. It is a strange thing that the chronic inflammation in the deep urethra which causes chronic arthritis is itself caused not by gonococci but by streptococci. The gonococci often die out and leave the streptococci behind.

Syphilitic arthritis is due to an infection else-

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where in the body, and is by no means rare. In spite of the discovery of the spirochete and the Wassermann test, the supreme test of a syphilitic arthritis (I except the Charcot joint) is its reaction to antiluetic treatment. The spirochetæ rarely can be demonstrated without infinite pains. In this respect it has borne hitherto a striking analogy to the arthritis caused by a chronic streptococcic infection in the tonsil—Rosenow's streptococci.

Autopsies have shown that a tuberculous arthritis is accompanied in the vast majority of instances by a tuberculous lesion elsewhere in the body. Tuberculous arthritis is probably always secondary, except in the very rare instances of direct infection from the outside. It is distinctly a joint affection following a local infection of some other organ.

An arthritis due to the pneumococcus has been observed occasionally in the late stages of a pneumonia, or as a sequel of the disease. It may or may not be possible in these pneumococcic arthritides to demonstrate the pneumococci.

A pneumococcic, typhoid, tuberculous or syphilitic arthritis may be complicated at any time by a secondary pus infection, and, on the other hand, a chronic encapsulated pus infection in the end of a long bone may give rise to a chronic non-suppurative arthritis. This last may be said to be an example of a joint affection caused by a marrow infection in the immediate vicinity.

Much remains to be found out about joint diseases. We need to accumulate a mass of absolute facts before we may indulge in much theorizing. As it is, we have been given to speculation, rather than to the hard grinding work that must precede sound reasoning. It is well at present to steer clear of dogmatic assertion, but everyone who treats arthritis may formulate his own ideas quite definitely, provided he keep his mind open to the possibility of error. For myself, as the result of clinical and laboratory work, I have reached certain conclusions, which I beg to submit—subject to change without notice:

Arthritis is the response of the tissues of a joint to an irritant. This irritant may be chemical (bacteria or their toxins) or mechanical. In the end the two causative agents are much the same. On this hypothesis gouty arthritis is essentially a traumatic arthritis due to the deposition of crystals of biurate of soda in the joint tissues. In a general way the response of the joint tissues is much the same, no matter what the nature of the irritant.² Tuberculosis has a distinguishing characteristic in certain animals, i. e., the tubercle. In other respects it is about the same as the other members of this group.

To ascribe to "metabolic disturbances" a causative role is to be guilty of an evasion. Disturbed metabolism means disease.

No sharp dividing line separates an acute from a chronic arthritis either clinically or etiologically. It is simply a question of intensity and duration of the irritant.

With the exception of the traumatic cases, and of the cases of direct infection from the outside, every case of arthritis is caused by a focus of infection somewhere else in the body, usually a focus

in some lymphoid tissue. It may be easy to demonstrate the causal organism in the joint fluid, or it may be very difficult. Possibly the organism may be in the bone marrow and not in the joint cavity. This is sometimes the case in bone tuberculosis, like the condition of a pleural exudate in pulmonary tuberculosis. Again, the organism may be present at times in the joint fluid, and at other times absent.

The essential pathological feature of the great type under discussion is a proliferative inflammation in the marrow of the bone ends, or in the synovia, or in both. All changes in the bone and cartilage are secondary to this.

In most of these diseases, of which tuberculosis and the arthritis caused by the cocci identified by Rosenow are conspicuous examples, the presence of lymphoid marrow and synovial membrane—some peculiarity of their structure—determines the location of the infection in the region of the joints. What this peculiarity is will only appear with a more exact knowledge of the structure and functions of the lymphoid marrow and synovia, and of their relation to the other lymphoid tissues of the body.

As the pathological process at the bottom of all these arthritides is much the same, it follows that their symptomatology is also similar. The diagnosis is not to be made from an inspection of the joint alone, but from a general study of the patient himself and of his history, and even then not absolutely. The joint may be swollen or shrunken, its temperature may be increased or normal, it may or may not contain fluid, constitutional symptoms may or may not be present. Rarefaction of the bone, and thinning and erosion of the cartilage are common to all. The location of the bone rarefaction is not definitely characteristic in any of them, only suggestive. A uniarticular nature prevails with some, a multiarticular nature with others, but here again there is no invariable rule.

Arthritis deformans is a term that should be dropped as quickly as possible, not because it is a bastard mixture of Greek and Latin, but because any joint inflammation may be deforming, and because many non-deforming joint inflammations are doubtless mild examples of the same pathological process which causes the extreme and crippling cases of so-called arthritis deformans. Again, the term arthritis deformans means different things to different men. It does not represent a clinical or a pathological entity, and tends to confusion. It is a relic of the days when we used long names to cover our ignorance. We might with equal reason speak of "nephritis deformans," or of "appendicitis deformans."

Because "rheumatism" and "rheumatoid" are vague terms, and have been used so loosely in the past, it is well to restrict their employment as closely as we can, and to discontinue it entirely as soon as we may.

TREATMENT.

The subject of treatment of arthritis is so broad that but a small section of it has been allotted to

me for my discourse, namely the Treatment of Tuberculous Arthritis.

I shall confine my remarks to joint tuberculosis in the adult.

To separate what we know from what we think we know is always difficult, and from this difficulty has sprung much of the present confusion in the treatment of joint tuberculosis. I call your attention to a few of the forms of treatment advanced in recent years: Traction, immobilisation, resection, amputation, scraping, drainage, hot air, baths, Roentgen rays, vaccines, injection of all sorts of materials, Stauungshyperaemie. Each based, as it is, on clinical experience, may be said to have been epidemic for a while, and then to persist in an endemic stage in certain localities. As Ludloff puts it: "Die Wahl der Mittel scheint hier immer noch mehr oder weniger persönliche Geschmackssache zu sein."

On the other hand the results of laboratory investigation are also not infallible, but they take us farther than does clinical experience. What we see under the microscope we know, but when we begin to draw conclusions, there is room for a difference of opinion. I shall therefore give first the facts which I have gleaned or which I think I have gleaned from a laboratory study of about 90 joints, tuberculous or thought to be tuberculous. These facts, with the aid of ordinary clinical experience enable me to draw certain conclusions about joint tuberculosis in the adult which no one need accept unwillingly. Everyone may draw his own conclusions.

Joint tuberculosis in the adult is a tuberculosis of the lymphoid marrow in the vicinity of the joint, and of the synovial membrane. Its presence in these tissues affects the nutrition of the other tissues about the joint, but the disease does not attack them directly unless a secondary infection be added. The bone and the cartilage are never attacked directly under any circumstances, but by their presence they influence mechanically the whole course of the disease.

Pure tuberculosis is never found in bone that does not contain lymphoid marrow. Yellow marrow is immune, or practically immune, to the disease.

Tuberculosis may start in the marrow, and later may involve the synovia, or vice versa. Again, it may exist in either of these tissues alone.

From the time of the formation of the first tubercle the disease tends to spread, and nature attempts to wall it in with fibrous tissue, and, in the marrow, with fibrous tissue also. According as one or the other process prevails, the disease tends to extension or to encapsulation. Possibly this statement might be said with reason to border on theory.

The disease as it manifested itself in my specimens was never discrete and definitely encapsulated. Its limits were never sharply defined, and its exact extent could never be determined exactly except by a thorough and exhaustive microscopical examination. It is diffuse, ramifies in every direction, and has certain favorite locations, one of

which is the marrow directly beneath the joint cartilage.

With the exception of its peculiar effect on the bone and cartilage, the pathological features of tuberculosis in the joints are those of tuberculosis elsewhere.

Ankylosis in our specimens was always fibrous, and was therefore never complete. Bony ankylosis never supervenes upon adult tuberculosis treated conservatively.

When we come to check up our facts with the histories of the patients from whom the specimens were taken, we make some interesting discoveries. We find in the first place a marked discrepancy between the clinical and the laboratory diagnosis, and, inasmuch as a laboratory diagnosis is much more reliable than a clinical, we draw our first conclusion, namely: A uniformly correct diagnosis of a tuberculous arthritis with our present facilities is an impossibility.

We find further that many of the histories of the patients from whom the joints were taken extend back for years, and that some of the joints were supposed to have been cured by conservative means. In others conservative measures had been tried for long periods in vain. We conclude from this that the cure by conservative means of a tuberculous joint in an adult, especially of a joint in which the bone is involved, must be at least an extremely difficult thing. Remembering the difficulty of diagnosis we draw another conclusion: that most of the cases of supposed tuberculosis in the adult, cured by conservative means were simply instances of mistakes in diagnosis.

All the efforts of Nature toward a cure tend directly or indirectly to deprive the joints of function. These efforts are never effectual. Some function always remains, and the entire process may be lighted up by a strain or a wrench, from a small tuberculous focus persisting after many years.

On the other hand, we find this astonishing fact: If the joint be destroyed by operation, and if secondary infection by pus germs be avoided, the tuberculosis in that region disappears. The disease is cured whether the surgeon removes much or little bone, whether or not he makes a diligent search for tuberculous foci, whether he dissects out the tuberculous synovia, or leaves it almost untouched. We know already from our study of the laboratory specimens that there is usually no way of removing all the tuberculous marrow except by an amputation, no matter what the idea of the operating surgeon may have been.

It is not then by removing all or part of the tuberculous tissue from the joint that the surgeon achieved his cure, for the histories showed that in those cases in which the joint had been curetted or partially dissected out, with this idea in view, the cure had not resulted. It was simply by destroying the joint and by avoiding secondary infection that the cure was attained.

Let us see if we can find any explanation for this. What happens in a knee joint after a resection? I think that this apparently simple question cannot be answered positively. Ollier, basing his

opinion upon museum specimens, said that the spongy bone became dense bone, the lymphoid marrow became yellow marrow, and the synovial membrane disappeared. A series of skiagrams of knee joints which I have resected indicate that this is correct. I believe it to be a fact, but cannot prove it as yet. If it is, the whole rationale of the cure of a tuberculous joint becomes evident. We have learned that the disease exists only in the synovia and in the lymphoid marrow.³ If these two tissues disappear, the disease will die out. It cannot exist where these two tissues are not. Hence all we need to do to cure tuberculosis in the joint is to destroy function, while avoiding secondary infection.

In the hip the destruction of the joint is accomplished in resections by producing a dislocation or an ankylosis. The impossibility of removing all the diseased tissue from the acetabulum is immediately apparent.

There is no essential difference between tuberculosis of the lungs and of the joints. Doubtless tuberculous foci may occur in the marrow of the bone ends, and may heal up without recognition during life, as they may in the lungs. The uncertainty of any absolutely permanent cure of pulmonary tuberculosis when once it has advanced to clinical recognition is well known. I believe the prospect of a permanent cure of joint tuberculosis in the adult, by conservative means is even poorer. Therefore our rules for treatment of tuberculosis in the adult are:

1. The treatment should always be radical, as soon as the diagnosis is positively made.
2. The object of the treatment should be to destroy function in the joint. If this be impossible, every particle of infected tissue must be removed at any cost.
3. Secondary infection should be sedulously avoided.

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2. I except one great type of joint disease from this category—Goldthwaite's hypertrophic arthritis, the English osteo-arthritis, the German "arthritis deformans."
3. The internal layer of the periosteum seems to partake of the function and reactions of the marrow in that part of the bone where it is located. It may be considered for our purposes as a layer of external marrow.

THE CURATIVE TREATMENT OF PNEUMONIA, WITH A REPORT ON THE USE OF LEUKOCYTIC EXTRACT.*

By HARRY B. REYNOLDS, M. D., Palo Alto.

Medical research thus far has not developed any means of specifically destroying the invading organisms of pneumonia. Our curative efforts must be limited to aiding the biologic mechanism of attack, defence, and reinforcement. First by putting the patient in a condition of physiologic rest we allow his body cells and fluids to concentrate on the development of his defence. No vital power should be diverted by muscular effort, men-

tal excitement, or nervous fatigue. Nutrition should be as nourishing and as abundant as the patient can dispose of; light solid food when the digestive function is efficient, fluid when the conditions require it. All avenues of excretion must be clear and efficient. The skin, the kidneys and the bowels must be kept active, that waste products of an increased metabolism shall not accumulate to embarrass the defense.

For a successful fight against any infection the animal economy requires an abundance of fluid. I consider the ingestion of large quantities of water a *sine qua non* in the successful management of severe pneumonias. Administered in copious drafts by mouth and by Murphy drip proctoclysis an average adult should take from five to eight pints daily. Normal or twice normal saline may be given by the bowel. When given subcutaneously the use of Ringer's solution possesses distinct advantages in the calcium effect on the heart, a valuable suggestion from Dr. W. W. Kerr.

The maintenance of blood pressure in severely toxic cases I consider a part of a curative therapy. It is best attained by the injection of pituitrin as used by Solis-Cohen¹ at Jefferson Medical College Hospital.

Quinine in large doses in the early days of the disease has, I believe, a curative action on the infection and deserves recognition in a consideration of a rational therapy. In the same way oxygen is not only a symptomatic remedy but is a curative measure in two ways. It stimulates circulation and respiration and by altering the oxygen tension it tends to obviate the formation in the red cells of methemoglobin, sometimes a determining factor of a fatal issue.

Physicians have long hoped for a rational biologic treatment for pneumonia. Thus far however the mortality of the disease has not been affected. Indeed if recent massive statistics by G. A. Gibson² are to be believed, the death rate from pneumonia in hospitals is higher in the last decade than in the previous forty years.

Certain attempts have been made to make use of specific sera. Clough³ of Baltimore has succeeded in protecting mice by the use of human serum but only against the homologous strain of pneumococcus. Indeed, the great barrier to the success of sera lies in their strictly specific limitation to the homologous strain. The great multiplicity of strain of the pneumococcus and its ready mutability seems to render the task impracticable. In 1904 Anders⁴ reported on 535 cases treated with anti-pneumococcic serum, and concluded that the results did not warrant its general use. The fact that a serum that is potent to protect an animal from a subsequent inoculation is powerless to aid an animal when once the infection is under way further tends to discourage specific therapy. Still further, it has been shown that a certain concentration of antibody content in the body fluids, the Schwellenwert or threshold concentration of Neufeld and Ungermann⁵ is necessary for results even in animal work, a concentration which seems beyond the practical limits of serum administration.

Dochez⁶ has apparently made progress in serum

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therapy of pneumococcus pneumonia by the classification of the cases into four groups, each of which is caused by a subfamily of strains, each strain of a given subfamily agglutinable with a serum specific for the corresponding group. Rufus Cole⁷ has reported his clinical experience with twenty cases after the method of Dochez, and is much encouraged by his results. The agglutination of the causative germ in a given case by the serum to be used in the treatment, places his method on a rational foundation.

Vaccine therapy has not produced results clinically because of the time requirements.

Rosenow and Hektoen⁸ have worked with partly autolyzed pneumococci. Rosenow has shown that when pneumococci are suspended in salt solution the toxic substances or "virulin" pass into solution while the residue has well marked antigenic properties and no toxic effect. Working with these antigens, the authors have published very persuasive clinical results.

One other biologic method remains and it is with this that my report is chiefly concerned. The rationale of the leukocytic extract of Hiss and Zinsser lies in the antagonism to bacterial toxins, of the endoferment of the phagocytic cell rendered available by maceration in sterile water. The phagocytic cell is able to protect itself against the digestive action of the ingested bacterium by virtue of the digestive ferment contained within itself. This so-called ferment termed by Hiss an endo-antitoxin, is set free by cytolysis in sterile water, and remains in solution in the same way as the toxins of the pneumococcus pass into solution in saline in the method of Rosenow and Hektoen. Working with this extract of rabbit's leukocytes, Hiss and Zinsser⁹ demonstrated by very clear-cut results the effect of the extract in saving animals infected with virulent pneumococcus cultures, the injected animals recovering with considerable regularity, the control animals uniformly dying.

Mr. Arthur Meinhard has but recently completed elaborate experiments on rabbits, the results of which are herewith published. He has amply verified the findings of Hiss and Zinsser. The latter authors¹⁰ were able to study the effect of the extracts clinically and obtained very promising results in a number of infections, some of the cases being pneumonia. Lambert¹¹ treated a number of cases of various infections and reported results which in his opinion warranted further trials of the remedy.

Floyd and Lucas¹² employed the remedy in forty cases in 1909 with a mortality of 12% as compared with a mortality of more than double this figure in 25 cases treated concurrently by the conventional methods. They noted a probable shortened course in some instances, a definite improvement in the comfort and in the symptoms of the patients and that in severe cases toxemia was noticeably lessened.

It has seemed to me that all workers heretofore have used very insufficient dosage. Hiss and Zinsser working with rabbits used doses averaging 1/400th of the body weight, and repeated the injections two or three times daily in animals se-

verely sick. The dosage thus far used clinically has been of about 1/6000th body weight or about 15 times too small. I have administered leukocytic extract freely, and it is to this practice that I attribute, rightly or wrongly, the absence of mortality in my series. It is only in the most serious cases that I have resorted to this treatment. It is too expensive and troublesome to use in those patients who are not sufficiently ill to justify extraordinary measures. Given in sufficient dosage I believe that leukocytic extract is our most valuable remedy for lobar pneumonia. Not its least advantage lies in the fact that it is not specific but is of equal value regardless of the nature of the infecting organisms.

My method is as follows: If the leukocytosis is satisfactorily high, I do not administer the leukocytic extract until the third day, or until the patient seems toxic. If the leukocytosis is low or absent I administer it at once and in these cases, and they are usually the severely prostrated ones, the leukocytosis then increases.

The leukocytic extract in salt solution including the cell detritus, is given with a Record syringe, 10 cc. being given at a dose, either under the shoulders or preferably in the skin of the abdomen or outer side of the thigh. A second and third dose is given at three-hour intervals. The temperature usually falls about ten hours after the first dose. The other effects noted are referable to the modification of toxic symptoms, nervousness is allayed, delirium is rarely noted and the degeneration in the kidney is certainly less than one would expect in equally severe cases not so treated. In my nine cases the highest temperature has almost uniformly been before the beginning of the injections, or after they have been interrupted. There is some pain at the site of injection but it is rarely troublesome.

The limitation of time allows only a very short history of the following cases:

Case 1. Josephine W., 5 years old. Ill for four days with fever and prostration before pneumonia developed. Constipation; colon bacilli isolated from blood and urine; stupor marked; pneumonia evident on the fifth day; continuously unconscious for five days; temperature 104°-106° F. Leukocytosis 21,000. Meningismus developed, simulating an extreme meningitis with rigid spine, retraction of head, spastic reflexes, inequality of pupils, and strabismus; spinal puncture showed normal fluid.

Three doses of leukocytic extract each of 10 c.c. were given on the tenth day and again on the twelfth day, none being available on the intervening day. Temperature began to fall, after first three injections, consciousness returned and toxic condition improved. Multiple colon bacillus abscesses developed at the site of hypodermic punctures and double middle ear abscesses occurred. Recovery was complete.

Case 2. Baby S., two years old. Has been since birth a subject of spasmophilia of the type of infantile eclampsia. Lobar pneumonia running for eight days with a temperature from 103° to 106°, pulse from 130 to 160, and severely toxic. Collapse on eighth day. Leukocytic extract, two doses followed in eight hours by a fall in fever and improvement in condition. Temperature rose again the next day and then fell by crisis to normal.

Case 3. Richard B., lawyer, age 35, seen in

consultation with Dr. J. E. Chapin of Redwood City. Had been in Arizona previously for weak lungs. First seen on third day. Temperature 104°, pulse 140 to 160. Sepsis severe. Prostration extreme; cyanosis; thin prune juice-like sputum in large quantities. A leukopenia of 2500 showed the overwhelming character of his infection. An absolutely hopeless prognosis was given the family.

Ten c.c. of leukocytic extract were immediately given and repeated every three hours. The next day he seemed much the same but his white cell count was 10,000. Stimulants, abundant fluid, Ringer's solution subcutaneously, and nourishment constituted the other treatment. The fever and pulse immediately improved. A complicating pleurisy prolonged his convalescence, but after a protracted period of weakness he completely recovered.

Case 4. Mrs. W. H. More than moderately ill with pneumonia. Temperature 103° to 104°. Defervescence not having occurred on the eighth day she received three doses of leukocytic extract. Twenty-four hours later the temperature was normal.

Case 5. Clifford B., 4 years' old. Seen on the third day. Prostration and temperature of 104.2/5°. Pulse 132, respiration 60, and of a grunting type. Complaining of abdominal pain; slight dullness posteriorly and broncho-vesicular breathing. Leukocytosis 21,400. Ten c.c. leukocytic extract given on the evening of the third day and morning of the fourth day. Temperature normal on the fifth day and recovery was prompt.

Case 6. Sam R., 7 years old; patient observed by Dr. Edith Johnson. Seriously ill with broncho-pneumonia with temperature from 103° to 104.8°, respiration 40 to 58 and pulse 125. Six doses of Cutter's filtered extract were given on the third and fourth days. Leukocytosis 22,000. Defervescence complete on the seventh day. There was never more than a trace of albumen in the urine, and the toxic condition of the child was scarcely noticeable after the treatment.

Case 7. Mrs. B., age 67. Ill with chill and fever of 103°. The following day temperature of 104°, headache, cough and bloody sputum. Urine heavily albuminous with numerous casts. Coated tongue, stupor and headache, suggested a toxic condition from the complicating nephritis. White cell count 17,500. Consolidation developed slowly, not being evident until the seventh day. Eighth day showed very rapid breathing, delirium, and temperature of 104°. Leukocytic extract begun on the eighth day and repeated at twelve-hour intervals. The fever dropped three degrees in twelve hours from the first dose and was only 99° twelve hours after the third dose. Convalescence uninterrupted.

The seeming results of treatments were: 1. Rapid fall in temperature. 2. Decrease in expectoration and increase in fluidity of sputum. 3. Early disappearance of albuminuria.

Case 8. Edith J., age 32; physician. Taken with severe chill and fever. In 24 hours had pleurisy pain, bloody sputum, severe cough, temperature of 104°, and leukocytosis of 12,000. Consolidation of left lower lobe. A series of five injections of leukocytic extract lowered the fever three degrees. The injections were stopped and the fever rose to 103°. Three more injections were given. The whole right lung became consolidated despite the use of the leukocytic extract. Defervescence occurred on the sixth day. With a severe double pneumonia the patient had no toxic symptoms, had scarcely noticeable albuminuria, defervescence occurred unusually early and an extensive involvement produced noticeably mild toxemia. However, the extract did not precipitate

the crisis though begun at the very onset nor was it effective in preventing extension of the disease to neighboring lobes.

Case 9. A. P. B., 35 years. Seen on the second day of his pneumonia. He then had a temperature of 103.8° and a pulse of 140. Was mildly cyanotic. Beginning pneumonia in whole of right lung.

Leukocytic extract of Cutter, the extract of sheep's leukocytes filtered through a Berkfeld filter, was given every four hours in the hope of precipitating a crisis.

The second day the left lung showed signs of involvement posteriorly and the right lung was well advanced toward consolidation. Cyanosis was marked and breathing and cough were labored. Leukocytosis 23,000. On the fourth day the fever was around 99.5° and I was in hope of an early termination but it rose the next day as the lung involvement increased and continued high until the natural crisis on the seventh day.

The noticeable thing about this case was the remarkable mildness of the toxic symptoms as was evidenced by a scarcely noticeable albuminuria, and moderate nervous symptoms and delirium, this in spite of an extensive double pneumonia.

A composite description of these nine cases represents a severe form of pneumonia running a full course with modified temperature curve, scarcely noticeable delirium, comparative freedom from toxic effect on the kidney, and terminating by crisis at the usual time.

From a study of these cases associated with an experience with leukocytic extract in other infections, I have gained the following impressions of its effect:

1. The temperature curve is modified.
2. Leukocytosis is not increased except in overwhelming infections with absence of leukocytosis where the neutralizing effect of the extract relieves the strain on the leukocyte-producing function.
3. Toxic symptoms are noticeably mild.
4. Albuminuria is much less than in untreated cases.
5. The disease is not shortened in its course and extension to neighboring lobes is not prevented.
6. The mortality figures are very remarkably lowered.

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COMPLICATIONS IN CATARACT EXTRACTION.*

By VARD H. HULEN, M. D., San Francisco.

It is not my purpose to discuss here all the complications and accidents incident to the cataract operation, but to touch on some important points where complications have arisen in my own cases or which have been seen in the practice of other ophthalmic surgeons, endeavoring to make a few generally helpful deductions.

From statistics, usually taken from large clinics wherein the operators are men of extensive experience with facilities approaching the ideal for doing successful surgery of the eye, we find the percentage of success in senile cataract extraction to be as large as 95 per cent. But you will agree that if it were possible to obtain accurate final reports from every cataract operation done, the good eyes obtained would not approach the above figures. If this is the case, the cataract operation never being one of emergency, might it not be advisable and entirely feasible for practically all cataract extractions in this country to be done by those only in our specialty particularly well equipped for this kind of work. This idea is thrown out here for your contemplation and for possible further discussion.

Through the law of averages all of us must eventually experience many of the disastrous complications in operating upon cataracts. For fifteen consecutive years I had escaped serious infection after an extraction, then two cases of panophthalmitis appeared less than a year apart.

It has been said that the loss of an eye to an ophthalmic surgeon is like the loss of the life of a patient to a general surgeon. But I say the loss of an eye following a cataract operation may be worse than death, for the blind eye or hideous stump or empty socket remains a living and often loud reproach to the operator the remainder of the patient's life, which may be a long one.

None of our text-books present anything like as fully as their importance deserves, the complications that the operator of even more than average skill may, and eventually does meet. In fact, some of the books scarcely more than enumerate the not uncommon accidents. There remains to us but to learn by experience of the actions and results of these complications and how they might have been better handled. To relate then some of our personal experiences with deductions may be mutually helpful even if we cannot always agree in our suggestions.

A complication in connection with the eye to be operated upon may be insignificant in itself, yet it may lead eventually to the most serious consequences. For instance, it was my bad fortune not long since to see in consultation a disastrous result with a good patient in the hands of an experienced operator, due probably to simple friability of the conjunctiva. Before the counter-puncture could be made, the conjunctiva tore, loosening the grasp of the fixation forceps; the sec-

tion was therefore made a little smaller than was intended. This fault became manifest on presentation of the lens in the wound when pressure was applied for delivery. At the moment of enlarging the incision with scissors, the cataract divided to the bottom of the vitreous chamber; the eyes were then bandaged. The following day when I saw her there had been no pain, the patient was docile, the eye quiet, and what appeared to be the edge of the lens was seen below. The vitreous was fluid, however, and a skillful effort to extract the recalcitrant cataract was unsuccessful. The second night, during the momentary absence of the nurse, the patient was terrified by a tremor, pulled off the bandages, etc. The outcome was a tragedy for all concerned, due primarily, we may truthfully say, to a friable conjunctiva. The lessons to be learned from this case are, first, to be sure to get a secure fixation on the globe, include it necessary in the jaws of an efficient forceps the insertion of the inferior or internal rectus muscle; second, always make a section surely large enough—there is no danger, when properly placed, in making a section too large. Many times when extracting a cataract in its capsule I have sectioned one-half the circumference with no harm following. I attempt a conjunctival flap as a routine procedure to aid the corneal nutrition, as well as for its other advantages. In our endeavor to cut a sufficiently large section it is important to avoid a deep counter-puncture which may be a serious complication on account of excessive hemorrhage, more easily lost vitreous, as well as slow and painful healing from the scleral section.

Once I have experienced the complication of iridodialysis, and with ultimate loss of the eye. The patient was a female, 67 years old, with diabetes. I had successfully removed the complicated cataract from the left eye some months before. When operating on the right uncomplicated eye in her room in the hospital, just as I was making the puncture we were all startled by a loud knock on the door, the messenger announcing he had an important paper for the patient to sign. She became very nervous, and while at the first operation she was an ideal patient, now became unmanageable, and I hesitated about proceeding with the operation at this time. The section was completed, however, without mishap, but the instant the iris forceps were used, the patient jumped and squeezed the lens out in its capsule. No vitreous was lost, but there was a large prolapse of iris and the anterior chamber instantly filled with blood. The extruded iris was snipped off, but owing to the bad behavior of the patient it was impossible to do more without administering a general anesthetic; this for various reasons I decided not to do, and bandaged the eyes at once. And little reaction followed, the healing was slow but uneventful. When the blood had disappeared from the anterior chamber it was seen that the pupil was obliterated by the drawing up and inclusion of the iris in the corneal wound, and there was an iridodialysis both at the external and internal extremities of the section. A few weeks after the

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eye became quiet, decided increase of tension appeared with characteristic symptoms. A large iridectomy was then made. Glaucoma again supervened and Elliot's trephining operation was done, the tension was quickly restored, and hypertension soon followed. An anterior sclerotomy was now performed. But regardless of any and all treatment, increased tension was only controlled by posterior sclerotomy. The eye, however, would become irritable from time to time, the cornea more opaque until vision dropped from 20/100 to fingers to the temporal side only. Eventually enucleation became advisable, the other eye showing extensive retinal changes. A large quantity of albumin in the urine was reported, as well as 3 per cent. of sugar. In the light from this most instructive case I should in a similar condition use general anesthesia before closing the eye and clear the anterior chamber of blood, do an iridectomy and free the corneal wound of iris tissue at the least. The chances of a good result thereby would, I believe, have been greater.

How to act in the complication of an incarcerated or prolapsed iris is sometimes puzzling. We not infrequently see eyes apparently none the worse for an incarceration, yet we should do every practical thing to avoid or overcome such a condition. One patient on whom I had done a perfectly smooth extraction with an iridectomy, was progressing beautifully, but through an indiscretion on the sixth day during the absence of the nurse, opened the corneal wound at one angle and a tiny incarceration of iris ensued. Pain followed which nothing relieved until a general anesthetic was given sixteen days later and the pinched iris freed from the wound. During this entire time there was but moderate reaction, judging from the appearance of the eye; the pain, however, was continuous and excruciating. The complication appeared insignificant, but on account of it I experienced the worst three weeks of my professional life. All is well that ends well, and this patient came out with a perfect eye and more than normal vision for distance and reading. It is perhaps better surgery to relieve *promptly* a prolapsed iris no matter how small or even an incarceration if there are any kind of symptoms.

Recently I extracted a mature senile cataract from the right eye of a Chinaman at the City and County Hospital. All went well until the second night when the patient got out of bed and found his way to the toilet, and though he stayed "only twenty thirty minit" considerable blood was found on the dressing and the corneal flap protruding between the lids, there had been a small intraocular hemorrhage. With a spatula the corneal flap was replaced but owing to the patient's continued activity the next day I found the cornea again protruding between the lids and the wound filled with a blood clot. Again the flap was replaced and as the patient, now that it was too late to do any good, became an ideal one, there was no further trouble. No useful vision was obtained up to the time he disappeared from my observation. This occurrence illustrates the harmful practice of

permitting, as is sometimes advocated, any activity to the recently operated cataract patient.

Panophthalmitis has been a complication in three of my cataract operations, all men and charity cases. One was a very old tubercular subject with nephritis and a generally bad and septic condition, but he was anxious to have his second eye operated as the other had been a fair success. I yielded to temptation much to the regret of both of us afterwards. My second experience was a surprise, for the patient was apparently in excellent condition and I had just operated his other cataract successfully under the same circumstances. The operation followed by panophthalmitis was absolutely smooth with the least traumatism possible. Those who witnessed this extraction remarked the ease and simplicity of the performance. The patient's behavior then and subsequently was perfect. He later reported that some one kept leaving the window open at the head of his bed; a violent "head-cold settled in his eye" as he expressed it. Enucleation was done a week later on account of the severe pain. I learned subsequently that the argyrol solution used frequently some days before the operation as a precautionary measure, was from the same bottle regularly employed in the treatment of a gonorrheal ophthalmia case in this ward. Here was a possible source of infection for my patient. We must ever be watchful for infection from remote origins. The third man had been living in a stable and was saturated with the filth therefrom in addition to having ozena. A smooth operation was followed by a classical picture of panophthalmitis and I enucleated the eye on the sixth day. A successful extraction of the cataract from his remaining eye was done some months later, his ozena having been thoroughly treated in the meantime, as well as a more thorough preliminary preparation having been carried out preceding the second operation.

A point I wish to lay stress on just here is that one should probably have less infection, even the mild ones that simply prolong the convalescence of an operated eye, if we sent patients to the hospital several days earlier than is usual and could thus give their eyes, skin, air passages and general condition more careful attention, and a complete bacteriological examination of the operative field be made before the time of extraction. It will be noted that two of these eyes were removed during the height of the panophthalmitis and I have done several enucleations for panophthalmitis without regretting it. Yet I know this procedure is not without possible danger as I saw a death from meningitis follow enucleation during panophthalmitis while a hospital resident in the New York Eye and Ear Infirmary.

Now just a few words concerning the loss of vitreous, time not permitting further enumeration in this broad field. Prolapse of vitreous may be due to an involuntary contraction of the ocular muscles, even the recti sometimes participate, these patients express themselves as having had no sensation at the time other than the muscular action, apparently being under good control and not at all

nervous. An oculist friend related to me how he once divided the tendon of the orbicularis subcutaneously previous to extracting the cataract as he judged the patient to be a "squeezer." He did not see fit to repeat the experiment though he said it worked this time successfully. At other times the subject may be a "bad actor" during the operation; I have seen a patient squeeze his eye through seeming perversity. To forestall the loss of vitreous in the above conditions general anesthesia would be necessary unless one repeated the experiment of tenotomy. At other times the loss of vitreous (fluid or normal) is due to faulty judgment or awkward action of the operator himself. When working under local anesthesia the surgeon should have the patient under his "control," his manipulations must be gentle but firm and deliberate, the section must be made large enough, the capsule should be fully opened, being careful not to displace the lens, and when the cataract is delivered the eye must not be fussed with unnecessarily; misguided efforts to get out a little more soft lens matter may be fatal. Also I lay special stress on first getting and then retaining full anesthesia of the tissues manipulated. It is my custom to remove the speculum immediately after the iridectomy and, other things being equal, I should prefer not to use a speculum at all.

It is by good team work on the part of the patient, the operator and his assistants that the larger part of serious complications in the cataract operation may be avoided, or successfully corrected when they do appear. In my opinion it is mainly through the highly-developed skill of Col. Smith's assistant whose duty it is to control the eye, that he is able to show such few losses of vitreous in his method of extraction in capsule. It is probably the lack of this invaluable assistant that those who have had the benefit of a course in India under Col. Smith have not made good in this method on their return to America.

The crying need in medical California to-day is for efficient eye service. Many of our hospitals, palatial buildings with generous equipment and admirable service in general medicine and surgery, have no adequate department for the ophthalmic patient. Our efficient co-operation should soon correct this, or provide the ideal thing—exclusive eye hospitals.

Discussion.

Dr. Hugo A. Kiefer, Los Angeles, said: I like to dispense with the use of the speculum, as it removes a dangerous source of pressure on the globe, which favors the escape of vitreous. Old patients especially are apt to develop delirium, whether it is the result of the anesthetic, or of the operation, or of the confinement, and this should be guarded against. One occurred in my private practice. I am in favor of confining the patient to bed, or at least to a darkened room, for at least ten days, as infections and hemorrhages are, especially prone to take place within that period.

Dr. Robert W. Miller, Los Angeles, said: I find nothing seemingly deserving criticism in the excellent paper read by Dr. Hulén. I wish, however, to emphasize the importance of a perfect toilet, and the best disposal of hemorrhage or incarceration

of the iris in the wound, with recourse to general anesthesia when necessary. It may even be better for some of us to employ general anesthesia more frequently before beginning the operation. Again, the elimination of the speculum, or the limited use of it, is to be commended. This, of course, necessarily means that the operator should have a competent assistant. It is highly important that the operator and his assistant become accustomed to work together.

A source of danger that has caused me much solicitude, is the possibility of a sudden burst of light from a window following the operation. I find it unsafe in a general hospital to trust this matter to a nurse—even though carefully instructed to secure the window shades by means of adhesive plaster or of weights. It will be safer if the operator give this matter his personal attention, in order that the wind may not blow the window shade from its place or the sudden action of the spring, elevate the shade, permitting a sudden burst of light, thus causing the patient to start, forcibly close the lids, and damage or ruin his eye. It is my habit, before operating for senile cataract, to put the patient upon a course of preliminary treatment for a period of two to four weeks. This course consists of giving one's attention to elimination and special attention to the condition of the nerves. Of course, we all aim to give our attention to the condition of the conjunctiva and lachrymal sac.

Dr. P. A. Jordan, San Jose, said: I wish to mention an operation of my early experience in California. An aged Spanish woman, blind in both eyes for years, was placed on the operating table. At the completion of the puncture and counter puncture, she screamed, and forcibly ejected the lens and much of the vitreous. The eye was dressed. The operator being much depressed, stated that he would enucleate the ruined eye in two days. To his surprise, two days later, the eye was found in a healthy condition, and rapidly healed, giving useful vision. I have had several cases of post-operative delirium. I think this is often associated with constipation, and relief is often obtained by a dose of five grains each of calomel, jalap and sodium bicarbonate. It is my custom to bind into the bandage, a copious black cloth, covering frontal region, cheek from ear to ear, and well down to the tip of nose.

Dr. G. H. Kress, Los Angeles, reported: Case of auto-extraction in a Mexican laborer who knew no English, who, after the corneal section, through squeezing of the globe, was able to do an auto expulsion of his lens, before the iris forceps could be used. Owing to the fact that the patient would not roll his globe downward, a successful iridectomy was impossible, and when the vitreous began to be present, the eye was bandaged, and the patient was sent back to bed, and then given full instructions in regard to absolute rest and not straining. The patient was at all times somewhat unruly, and next morning, in spite of orders for rest, patient was found getting out of bed, etc. In spite of all this, the wound healed with slight iris incarceration, a pupil with dull reflex near the fundus, and a blood clot (which went on to resorption), and next to inferior sphincter margin, a capsular cataract or arc. About six weeks later, a secondary capsulotomy was done, down and in. Patient was discharged later with a vision of about six-twentieths. The unruliness of this patient, and this experience, goes to emphasize the previous remarks on the great importance of proper education of the patient prior to operation.

Dr. Kaspar Fischel: One of the most important measures for preventing accidents at cataract operations is the training of the patient. While comparatively few patients have a good control of their eyes at the first sitting, a few days' training will make most of them quite tractable. I teach the attendant to take hold of the upper lid and let

the patient look down. This should be done a number of times a day. The saddest complication is probably an internal hemorrhage during or immediately following the operation. I hope the essayist will never experience one.

Dr. W. H. Dudley, Los Angeles, said: I think I have had my share of complications, but one was reserved for last year, which I had not seen before. A woman, age about seventy, from whom I had extracted a cataract from the right eye three years before, came with a cataract in her left eye. Examination showed it to be mature, but not hyper-mature. The patient was enjoying good health, and examination of the urine was negative. The corneal section was made at the limbus, was correct, and the behavior of the patient was excellent. Almost immediately after the section was made, liquid vitreous began to flow out of the section. With an instrument, the lens was lifted out of the section without further loss of vitreous, and the eye dressed with bandages. The wound healed in forty-eight hours, with little reaction, and a week later the patient could tell the time by the watch with a plus 13 D. lens. Soon, however, some pain was complained of, and slight pericorneal redness persisted, and the tension was -1, which continued for some few months, when she was lost sight of, at which time a pupillary membrane had formed which rendered the eye valueless for sight. This shows that an eye which reacts functionally, as a healthy eye should, with all appearances of a healthy eye, as cataract eyes go, may be diseased after all.

Dr. B. F. Church, Redlands, said: Fixation forceps should be replaced in cataract operation by a small fork. The globe can be held more steadily than can ordinarily be accomplished with the forceps. It has the advantage of not folding up the conjunctiva, and gives a firm resistance for puncture and counter puncture. Its use is less painful to the patient.

Note: The paper was also discussed by Dr. Deitling of Los Angeles, and Dr. L. Deane of San Francisco.

Dr. V. H. Hulen, San Francisco, closing his own paper, stated: He had never had delirium follow extraction, and believes this experience due in great degree to preliminary preparation of patient physically and mentally. He uses Ring mask, and thus dispenses with a dark room, and thoroughly protects eyes from accident. Artificial light would be desirable if we had an inspired person to hold it in required position.

In regard to operation in bed, he would like an operating-room, admitting the bed, and wishes hospital builders would arrange for eye patients, as their requirements are peculiar to themselves, and so necessary for good results. He could touch on but few complications in paper, so limited it to personal experience.

THE PREVENTION OF TUBERCULOSIS IN CHILDREN.*

By T. C. McCLEAVE, M. D., Berkeley.

The finer diagnostic methods of recent years have led many investigators to the conviction that tuberculosis is essentially, in its origin, a disease of childhood. The occurrence, before the age of puberty, of positive tuberculin reactions in almost all individuals tested; the revelations of the Roentgen ray as to the frequency of diseased bronchial and other lymph nodes heretofore largely over-

looked; the similar disclosure of incipient lung changes; the significance of all of which, being confirmed by the necropsy findings in the bodies of a large proportion of the children coming to autopsy, indicates that infection with the tubercle bacillus is commonly an incident of very early life.

The ultimate solution of the problem of the eradication of tuberculosis must lie, it would seem, in the prevention of this early infection.

Prophylaxis should begin before conception; that is, no manifestly tuberculous woman should become pregnant. This is a matter, however, at present largely beyond control and many babies must unavoidably come into the world handicapped by such parentage.

This is not to say that the mother transmits tuberculosis directly to her infant in utero, which rarely occurs, or even that she endows it with a peculiar susceptibility to the disease, as has been so generally taught; but the child of a sick mother is necessarily born with impaired vitality into an environment which offers exceptional opportunity for early infection. The association of mother and infant is ordinarily so close that a mother with open tuberculosis could only by most extraordinary precaution avoid infecting the child, and the danger is but little less where the father or other members of the household are tuberculous.

Ten thousand children under five years of age die of tuberculosis each year in the United States, and of these seventy-five per cent. are of tuberculous parentage. A small proportion of these cases are possibly of the true congenital type, while a few others may perhaps have been infected at the time of birth, but the source of infection in the great majority is of course the sputum of the mother or other tuberculous member of the family. The evidence is indubitable that tuberculosis is preeminently a house disease, and that early life is the period of greatest susceptibility.

Not only is maternal tuberculosis an important consideration in respect to the future welfare of the expected child, but is of tremendous importance in respect to the usual disastrous effect of child-bearing on tuberculous women.

Tuberculosis is one of the gravest complications of pregnancy and may, in a considerable proportion of cases, present a definite indication for therapeutic abortion. It is estimated (Bacon) that there are about 32,000 tuberculous women pregnant every year in the U. S. Between 44,000 and 48,000 women of child-bearing age die of tuberculosis every year, about one-fourth of whom have passed through pregnancy within the year, or in other words, one-third of all tuberculous pregnant women die within one year. These figures, with what has previously been said of the infection of the offspring of these women, gives some

*Read before the Alameda County Medical Society, September, 1913.

idea of the importance of the problem of motherhood in tuberculous women, as regards society in general, but especially in reference to incidence of the disease in children.

For her own sake and that of her child, the tuberculous woman coming to labor should be treated in a well equipped hospital, for these cases require much more than ordinary obstetric care, and only in a hospital can labor be so conducted as to insure the mother passing through the ordeal with as little expenditure of her strength as possible, little loss of blood or risk of infection, proper supervision of the puerperium, thorough isolation of the child, and skilled attention to its dietetic and hygienic needs from birth. In the hospital, also, is afforded an excellent opportunity for the instruction of the mother in the principles of personal and family hygiene essential to the proper care of the child after leaving the institution.

Statistics, as quoted, show that but little has yet been accomplished in the control of the disease in this class of patients. C. S. Bacon, however, in a paper read at the Minneapolis session of the A. M. A. described a plan of treatment for them which has been adopted by the Chicago Municipal Tuberculosis Sanatorium, and which promises to have far-reaching results. His proposal is that there shall be established in connection with tuberculosis sanatoria maternity departments in which expectant mothers shall be cared for not only during labor and later, but throughout at least the latter months of pregnancy. As many of these women will be found to already have one or more children, and as they neither can nor will, in most instances, leave them at home while they themselves are in the sanatorium, some provision must be made for the children. Moreover, many of these little ones are themselves already infected, and in need of medical supervision, hence it is proposed that there shall also be established a department for the care of these dependent children while the mother is in the institution. The whole plan is so sane, and so fundamental in principle, that it should make an immediate appeal to all those interested in the problem of tuberculosis control.

A child born of a tuberculous mother or into a tuberculous family must receive the most scrupulous care to prevent its being unduly exposed to contagion. It should, so far as possible, be isolated from the afflicted members of the household. If the mother be tuberculous, isolation, unless she be too ill to care, may seem harsh and extreme, but it should be insisted upon, for I believe that there are but few mothers who, in constant association with their babies, could be restrained from fondling them, or who, having open tuberculosis, could be successfully taught to so care for their personal hygiene as to eliminate the danger to the infant.

A baby should not be suckled by a tuberculous mother. In certain instances, it would no doubt be safe to draw the milk from the breasts and feed it to the infant, but this should only be done after determination of its innocuousness by bacteri-

ologic investigation. Unless bacilli were found in the milk, inoculation experiments would alone be conclusive, and the amount of time required for these, some weeks at least, would render the method impracticable. It would seem wise, therefore, to make no attempt to use the mother's milk, for fear that it may contain living bacilli, even if it were well for the mother to attempt lactation. As these children must consequently be artificially fed from birth, except where wet-nursing can be resorted to, their nutritive needs should be a matter of extreme concern, and every effort should be made to overcome or obviate congenital physical deficiencies by a proper dietary and careful attention to the babies' hygiene.

Milk from tuberculous cattle is the second great factor in the causation of the disease in children. Tuberculosis, as is well known, is very common in many species of animals, and prior to 1896, the unity of the disease in man and animals and its transmissibility from one to the other was unquestioned. In that year, however, Theobald Smith first described certain cultural and other differences in the bacilli derived from human and bovine sources, a discovery which at once caused doubts to be expressed as to the identity of the disease in the two species, and led to Koch's famous statement in 1901, at the British Congress on Tuberculosis, that tuberculosis in man and tuberculosis in animals are different diseases; that it is impossible to transmit the disease from one to the other; and that man need not fear infection from cattle, either through eating the meat or drinking the milk of tuberculous animals.

This sensational assertion has long since been controverted by most conclusive evidence. Indeed, some almost equally authoritative bacteriologists hold that milk from tuberculous cattle is perhaps the chief source of infection in young children. Von Behring has been foremost in advocating this opinion, while Sims-Woodhead in England, Orth in Germany, and Ravenel in this country are among the leading exponents of the theory that bovine infection in man is far more common than is conceded by most investigators. It is held that even pulmonary tuberculosis may arise from the ingestion of tubercle bacilli, which, passing through the uninjured intestinal mucosa, reach the lungs by way of the mesenteric lymphatics and blood stream; a possibility which has been amply demonstrated by experimental methods. The extreme rarity of pulmonary cases yielding bovine bacilli, only two or three such having been reported, is ascribed to metamorphosis of the bacilli by long habitat in the human body. That such metamorphosis may occur is to be expected from the known behavior of other bacteria under differing environments, and some evidence has been adduced to prove its possibility in respect to tubercle bacilli. This controversial phase of the subject is beyond the scope of the present paper, however, and has been discussed elsewhere by the writer.¹

Taking as a criterion the presence of bacilli of persistent bovine type, it may be said with certainty that those forms of the disease which are found

¹ McCleave: Amer. Jour. Dis. of Children, 1914, viii, 210.

almost exclusively during early life, such as glandular, bone, abdominal and generalized tuberculosis in young children, are very largely due to bovine infection. Thus A. P. Mitchell of Edinburgh, in a study of 72 cases of cervical adenitis in children, found bovine bacilli in 65 cases. Of the children two years old or under, 84 per cent. were fed on unboiled cow's milk. J. Frazer in 100 cases of bone tuberculosis, found 62 yielding bovine bacilli, and 73 per cent. of the children were under three years old and had been fed raw milk. Park and Krumweide, in a tabulation of the recorded cases in which the type of bacillus had been determined, ascribed over 50 per cent. of the cases of generalized tuberculosis in children to bovine infection.

Such authorities as Knopf, Rosenau, Delepine, Sims-Woodhead, and Park estimate that about 25 per cent. of all tuberculous children under five years old suffer from infections of bovine origin; and that these cause from six to ten per cent. of the deaths from tuberculosis in children of this age.

The Bureau of Animal Industry estimates that at least 20 per cent. of dairy cows in the United States are afflicted with tuberculosis, while in certain areas the percentage is very much higher. Many of these cows expel bacilli with their milk, while in a large proportion of them, virulent bacilli are found more or less constantly in the intestinal discharges. As manure is the most common and practically a universal contaminant of milk, it constitutes the chief source of the tubercle bacilli in the milk.

It is evident, then, that bovine tuberculosis is a very important factor in the causation of tuberculosis in children, and it is clear for the protection of the child against this form of the disease, it is essential that the milk, butter, and other milk products in his dietary shall be free from living tubercle bacilli.

Certified milk and milk of lower grade if from efficiently tuberculin tested cattle, is reasonably safe; but ordinary grades can be rendered absolutely safe by but one practicable method, namely, heating to a temperature sufficiently high to kill the bacilli. This is now ostensibly done with such of the market milk as is, either voluntarily or by legal compulsion, subjected to pasteurization; but most commercial pasteurization, unless done under a system of official supervision and control at present impossible in most communities, is absolutely unreliable. The same is true, also, of much of the alleged tuberculin testing. The remedy lies in home pasteurization. Every mother should be taught the dangers of uncooked milk to her children, and should be brought to realize that only by heating the milk in her own kitchen can she obviate this danger. When, and only when, this becomes a universal practice, will bovine tuberculous infections in children be eliminated.

Certain common infectious diseases seem to render children more prone to tuberculosis, and must be noted in any discussion of the prophylaxis of that disease. Measles seems to be especially malevolent in this respect and pertussis only less so.

The common cold, if often repeated and neglected, must also be included in this category. While almost every child sooner or later acquires measles, and a very large proportion pertussis, they should be protected as far as possible against these diseases, and every effort made to defer their incidence. The commonly expressed opinion that they are comparatively trivial disorders is highly erroneous, and the doctrine of many mothers and some physicians that children might as well get them over with early is intolerable.

Diseased tonsils have been at times accorded considerable etiological significance as portals for the entrance of tubercle bacilli into the body in cases of pulmonary tuberculosis, it being claimed that they passed to the lungs by direct lymph channels; but histological and bacteriological study of the tonsils reveals tuberculous changes and bacilli in these structures comparatively infrequently, except in individuals having open tuberculosis, and in whom it is probable that the tonsil condition is secondary. In tuberculosis of the cervical lymph nodes, however, the infection undoubtedly does enter through some portion of the lymphoid ring of the pharynx; and adenoids and diseased tonsils so profoundly affect the child's general physical condition that their presence must be considered to predispose to tuberculous infections in other parts of the body. No child is therefore adequately protected against tuberculosis who has bad tonsils or adenoids, and every such child should be subjected to prompt and radical operative treatment. Dental caries is of similar significance, and must be guarded against. Decayed teeth are reservoirs of septic material, and by toxin absorption and interference with the proper performance of the digestive functions, cause, in many children, a degree of malnutrition which markedly lowers their resistance to infections.

A discussion of the general hygienic measures necessary for the prevention of tuberculosis in children would be burdensome at this time, and is unnecessary. All are familiar with the need for pure air in homes and schools; proper clothing; a properly balanced dietary, avoiding both under- and over-feeding; and prevention of indiscriminate kissing of children by servants, friends, or passing strangers. Public parks and playgrounds, milk depots, school diet kitchens, day nurseries, open air schools, medical inspection of schools, limitation of child labor, and legal protection of pregnant and lactating working women; all these need but to be mentioned to recall to your minds their beneficent results.

Many and diverse are the agencies engaged in combating the white plague, but since a large percentage of tuberculous disease has its inception in early childhood, preventive measures which do not include that period of life are futile. Physicians and others interested in this propaganda should therefore insist upon the fundamental importance of the prevention of tuberculosis in children.

Berkeley National Bank Building.

MEDICAL SOCIETY

State of California

IMPORTANT NOTICE!

San Francisco, October 15, 1914.

Dear Doctor:

Vote "NO" on Initiative No. 46, on the ballot for the election November 3d, and get all the voters you can to do likewise. It would be a great injury to have this become a law. It would license every quack in the State, allow them to perform all kinds of surgery, sign death certificates, call themselves "Dr.," etc.

Get in touch with the secretary of your county society and find out the details.

Cordially yours,

PHILIP MILLS JONES, *Secretary.*

"DECOMPRESSION IN ACQUIRED INTERNAL HYDROCEPHALUS."

Report of Case.

By CECIL E. REYNOLDS, M. R. C. S. Eng., L. R. C. P.
Lond., D. P. H., Cambs, Los Angeles.

Mrs. H. L. S., aet. 34, had suffered from headache since childhood, but can fix no definite onset. The headache was general in character, worse at the occiput and accompanied by "eramping spells" in which the arms and legs were drawn up, and the head retracted. Consciousness was sometimes lost in these fits, but not always, and the bladder and rectum never acted involuntarily. Vertical diplopia was, however, complained of, and when walking in the street passers-by appeared to have two heads—one on top of the other at times. Formerly she would remain free from attacks for years at a time, but of late the attacks occurred every two or three months. Occasionally she vomited. She has worn reading glasses for two years, but they were prescribed by an optician. No oculist had ever examined her eyes.

Four months prior to the time I first saw her, on July 12, 1913, the headache and vomiting became more intense and the "eramping spells" became more frequent, and appear to have had Jacksonian qualities. The right arm was more affected than the left, and the face was quite unaffected. She steadily lost weight. Upon turning the head quickly, especially to the left, she experienced great vertigo, and her description of this much resembled Meniere's syndrome, and she staggered in walking (she thinks to the left). On July 12, 1913, Dr. Alfred Fellowes, who had charge of the case, called me in consultation. I found the patient in great distress—she vomited when attempting to sit up in bed, and complained of intense headache, general in character. She could not clearly see people in

the room; her pulse was 80, temperature normal. She complained of numbness in the ring and little fingers of the right hand, but sensation was unaltered there and elsewhere. The patient is right-handed. There were absolutely no focal signs; no ptosis, nystagmus or strabismus. Both knee-jerks plus and equal—no ankle clonus. Plantar reflex flexor both sides. Power sensation and co-ordination normal and equal. No ear, nose, scalp or lung disease. Blood pressure not taken, but it was raised to the finger. Lumbar puncture not performed owing to dangerous intra-cranial pressure. Dr. Swift confirmed the optic neuritis, but the patient's relatives were averse to operation, and accordingly she was put on large doses of pot. iod. in spite of the fact that the blood yielded a negative Wassermann, by Dr. Bonyng. As, however, no improvement took place, the patient asked for further consultation, and Drs. H. G. Brainerd and McCleish confirmed the urgency of operation; and accordingly she was admitted to the California Hospital on July 22, 1913, and placed under my care. At this time she had a slight paresis of the



external rectus muscle of the right side. Temperature 99°, pulse 120, respiration 24; urine acid, 1030; some albumin. She cannot see fingers at a distance of one foot. No tendency to coma. No aphasia.

I operated immediately and was assisted by Dr. Alfred Fellowes, whilst Dr. Connerty maintained a light ether anesthesia. Seeing that the focal signs were too indefinite to justify me in imperiling her speech centres by exploring her left side, I decided upon a right temporal decompression without bone replacement. A large flap with the convexity above, was turned down, exposing the temporal muscle, through the center of which a vertical incision was made to the bone and the two halves retracted together with the subjacent periosteum. The upper two-thirds of the squamous temporal and surrounding three-quarters of an inch of the parietal bone was removed with the De Vibiss forceps after a small preliminary trephine opening had been made. Hemorrhage from the

bone was arrested with Horsley's wax. The dura was tense and greatly bulging. After ligation of the meningeal vessels with fine catgut, a dural flap with a convexity below was turned up, the lower border of the dural flap being one-quarter of an inch above the bone margin. The brain vessels were intensely engorged. No local resistance or discoloration noticed. It was not deemed advisable after ventricular puncture to remove more than a small amount of fluid at this time, which, however, was not sufficient to allow the dural flap to be stitched in place. Accordingly the dura was simply laid back over the brain and the temporal flap replaced and stitched with silkworm gut and horse hair. The bone was left out altogether and a cigarette drain inserted at the postero-inferior angle. Aseptic gauze dressing applied. The patient was returned to bed in good condition, and was conscious ten minutes later.

July 23, 1913—Headache improved, but a sense of fullness over the site of operation. During the dressing, drain was removed, followed by a discharge of bloody serum, and then by clear cerebrospinal fluid (collected for examination). Immediate relief. Maximum temperature 98.6°, pulse 140, respiration 18. Minimum temperature 97.8°, pulse 112, respiration 14. Comfortable night.

July 24, 1913—Some vomiting following liquid nourishment, and some generalized aphasia—(object blindness, motor difficulty of speech, and deficient appreciation of spoken words). Eyesight improving. The aphasia was evidently due to edema of the left cortex, and accordingly the patient was immediately put up on a back rest, and the same evening the aphasia had cleared up almost entirely and the patient was brighter and better. Discharge less. Absolutely no paresis or sensory defect. Paresthesia of the right little and ring fingers still present. Some edema of the right eyelid causes ptosis. Rectal feeds given. Max. 99.4°, 124, 20; min. 98°, 112, 14. Urine now free from albumin, but acetone present. Pot. iod. continued. Before leaving hospital hernia had increased somewhat.

Subsequent recovery complete and uneventful. Radiogram of the skull shows nothing definite, but in addition to the area of decompression a suspicious thinning of the bone was observed above the internal occipital protuberance. As the eyes recovered, objects appeared to be covered with lace, but this sensation disappeared when recovery was complete.

January 14, 1914—Patient has completely recovered her eyesight and gained 25 pounds in weight; has had no sign of a headache or "cramping spell" since the operation; the same two fingers are still numb, but no anesthesia can be determined. She has been very cheerful and has taken long walks up to the present time. Her intelligence has been as good as it ever was, but the last three days the hernia has increased in size and become tense and very definite aphasia and amnesia noticed. She calls objects by the wrong name, knows what she wants to say, but cannot find the right word. When asked to read a simple sentence she does so, but after six times can not remember what she has read. Realizes her condition and is greatly discouraged. Attributes it to excessive walking. Up to this time hernia had remained the same size, and at the same tension as when she left hospital. Free purgation and rest prescribed and pot. iod. recommenced. The aphasia cleared up in a few days and the hernia again became slack as usual. Discs show no secondary pallor and are but slightly blurred on the nasal side. Lumbar puncture was not performed, as the patient was averse to any sort of operative procedure.

At the present time, July 20, 1914, her health and general condition is better than ever before in her life. She has increased her weight another five pounds and has had no recurrence of any

symptoms, and the hernia is diminishing; hence the diagnosis of tumor of the left cortex is almost untenable on the strength of numbness of the two fingers of the right hand. The aphasia is not a focal sign, as it is too generalized, and was not complained of before operation. It might be explained by the possibility of her being one of those rare individuals who, although right-handed, carry their speech centers in the right cortex. It appears to me more probable that some chronic meningitic process may have partially occluded the foramen of Majendie or of Key and Retzius, so that under congestive conditions they almost lose their function and a state of hydrocephalus temporarily results until the exacerbation passes off. This is slightly supported by a positive Von Pirquet reaction, and strongly supported by the old history of symptoms resembling posterior basic meningitis followed by steadily increasing symptoms of intracranial pressure extending over a period of years. Now that she is well, it is my intention to administer injections of tuberculin. Should she again get urgent symptoms, I would consider myself justified in performing simultaneous ventricular and lumbar puncture, to further substantiate diagnosis, followed, if need be, by perforation of the corpus callosum. Whether free communication between the fourth ventricle and the subarachnoid cistern will ever be re-established, time alone will show, but at present it is quite satisfactory so long as she lays no undue strain upon the cerebral circulation. She notices a decided sense of fullness when bending down to lace her shoes. As things are, I think it is a good case to leave alone.

WET NURSE DIRECTORY

Established at the University Hospital.

The importance of human milk for very sick babies or for very young and delicate babies deprived for one reason or another of their own mother's breast milk and the absolute necessity for breast milk for premature infants has led me to establish a directory for wet nurses at the University Hospital. During the last few months we have been having one or more wet nurses constantly attached to the pediatrics service of the University Hospital. During this time we have placed several of our wet nurses, at the request of physicians, in private families or have furnished drawn breast milk to homes where for one reason or another, that was considered the best way to meet the situation.

We are always willing to try to furnish a wet nurse to any physician or to furnish a moderate amount of drawn breast milk if called for at the University Hospital.

To obtain a wet nurse the family must pay a registration fee of \$20.00 to the hospital, which is the nominal fee we have found it necessary to charge in order to help meet the expenses of keeping up the directory. The salary for the wet nurse will be from \$40.00 to \$50.00 per month or \$10.00 a week.

Each wet nurse and baby is examined by us and no wet nurse with any signs of tuberculosis, syphilis or gonorrhea will be sent out. Wassermann examinations are done in all cases and a careful history of the wet nurse is taken (most of the wet nurses will be mothers from the University Hospital Maternity Service, where, of course, complete histories and examinations are kept). Each wet nurse is kept under observation long enough to know the character of the woman and the condition of her baby. Her baby's weight is kept and unless it has done well she is not considered a suitable wet nurse. The mother is in most cases

taught to pump her own breasts and to properly care for her milk. The milk is examined as to amount and quality, fat and proteid estimations being done.

Every mother must take her baby with her. We will make no exceptions to this rule. There are several very good reasons for this rule; the sick, delicate or premature baby is usually not able to drain her breasts as her own baby does and not emptying her breasts soon dries up her supply or affects the quality so much that she does not prove a successful wet nurse. This has been proved so often by personal experience that I do not any more consider it a justifiable medical procedure to separate the mother and child, even if there were not equally strong social and economic reasons for the same position. Many of these mothers are mothers of illegitimate children and it is hoped to have the mothers become so attached to their babies that they will continue to care for them and not become permanently separated from them as is so often the case if they are not kept together the first year of the baby's life. By keeping mother and baby together her responsibility for the child is strengthened and fostered and in most cases she becomes very fond of it and devoted to it. Finally, her net earning capacity is lessened if she is paying out money for the baby's board and so even from the most mercenary and economic standpoint we feel that they should be kept together.

In those cases where it is impossible to have a wet nurse and yet human milk is imperative for any period of time, long or short, we will attempt to furnish drawn breast milk. The registration fee for this will be \$10.00 and 10 cents per ounce of milk furnished. Arrangements will have to be made beforehand at the hospital for this supply and the supply obtained at some definite hour daily from the hospital. This supply is derived from two sources, one from our corps of hospital wet nurses and from the mothers on the maternity service, the other, from mothers in various sections of the city from whom we collect a daily supply. We are responsible for the collection and care of the milk till it is ready for delivery. In this way we are at present delivering breast milk to several sick babies not only in San Francisco but also in cities outside, in amounts varying from half a pint to a pint to each case a day, or a total of from one to two quarts a day.

We hope to be able to grow with the demand and will do all in our power to be of any assistance we can be to physicians who need breast milk in their practice.

WILLIAM PALMER LUCAS, M. D.,
Professor of Pediatrics, University of California Hospital,
2nd and Parnassus avenues, San Francisco.
Telephone Sunset 1151.

A CASE OF ACHONDROPLASIA (FETAL RICKETS).

By GEORGE H. EVANS, M. D., San Francisco,
and HOWARD E. RUGGLES, M. D., San Francisco.

Vernie D.—Age 15 years, a school girl, was referred to me June 11, 1914, complaining of right temporal headaches and much nasal catarrh. She had always been bright until the last few months, since which time she has had difficulty in keeping up with her school work, has become forgetful and speech at times seems difficult. She has lately had some night sweats. Digestion is good and bowels are regular.

She was apparently a normal baby weighing 10½

pounds at birth; was very precocious, talked at five months, walked when eight months old, but did not cut her first tooth until the age of 18 months. No evidence of rickets was noticeable until after walking when she became bow-legged and later an osteoplasty was done. Her general health until recently has been good and she has had no serious illnesses. Three years ago she menstruated slightly but has not done so since. Her parents are living and well. Her mother has another child 11 years old. She had a number of miscarriages, all super-induced except one when patient was five months old.

Examination: She is of extremely low stature, measuring 130 cm. Her facial expression indicates naso-pharyngeal obstruction. The skin is soft, smooth and dry. Hair on the head is luxuriant, not dry. Axillary hair is scant, pubic hair well developed. Hands are stubby and not suggestive of Frohlich's syndrome. Breasts are well developed, which development has occurred mostly during the last year. External genitalia seem normal. Legs are somewhat bowed and she finds it difficult to retain the upright position. The contour of the back is good. There is a patch of fine hair in the lumbo-sacral region. Thyroid gland is not palpable.

Chest: Heart is normal in size, the left border being 8 cm. from the median line. Heart sounds are negative. There is some increased dullness in the upper part of the sternum, more on the left than the right. Pulse is 80. Systolic blood pressure 120. Lungs are normal.

Abdomen: The abdomen is normal.

Nose and throat: The throat shows very bad tonsils. Both nares are filled with pus, the septum is deflected and all turbinates are much enlarged, interfering with drainage. Transillumination shows antrum and frontal sinuses apparently clear.

Nervous system: Negative findings except that knee and ankle reflexes are much exaggerated.

Eyes: Examination of the eyes kindly made by Dr. Albert J. Houston shows extra ocular muscles normal, pupils prompt, vision normal in each eye. Slight hyperopia. Field of vision normal with no central scotomata, accommodation is normal. Media clear and fundus quite normal in each eye.

Ears: Normal except for a slight catarrh of the right middle ear, eighth nerve is normal.

Urine: Specific gravity 1.020; albumin, sugar, bile, and blood absent; indican present. There were no abnormal cellular elements and no casts.

Roentgenograms show the following:

Lateral view of the skull shows a normal sella, measuring 11 mm. from front to rear and 10 mm. in depth. Frontal and sphenoidal sinuses are rather large.

The long bones, including the metacarpals and phalanges, have the following characteristic appearance. The diaphysis is short and wide with a thickened cortex and the humerus, radius, ulna, and fibula show moderate bowing. At the zone of proliferation the shaft flares to meet the widened epiphysis, producing clubbing of the ends of the bones. The epiphysis is wide and its trabeculae coarse. The epiphyseal lines are very thin and sharply bounded and there is a tendency to "lip-ping" at the margins on both sides of the line. The fibula and radius are relatively longer than the tibia and ulna, causing moderate inversion of the feet and hands.

The lengths of the various bones are:

Humerus, 22 cm.
Radius, 17.3 cm.
Ulna, 19.2 cm.
Femur, 34.2 cm.
Tibia, 26.0 cm.
Fibula, 27.3 cm.
Metacarpals, 3.6 cm to 5.1 cm.

BOOK REVIEWS

Black's Medical Dictionary. By Dr. J. D. Cowrie.

This book is furnished for editorial purposes by the New York publishers, the Macmillan Company, 66 Fifth Avenue, and it is respectfully suggested, in the interest of your readers, that any review or notice that you may be pleased to publish should mention their name and address, as publishers, and the price of the book, which is \$2.50.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume III; number IV. Octavo of 254 pages, 65 illustrations. W. B. Saunders Company, Philadelphia and London. Published bi-monthly. Price per year: Paper, \$8; cloth, \$12.

Contents—Murphy's clinical talks on surgical and general diagnosis. Arthroplasty of hip. Ascending root neuritis following amputation of the cauda equina close to the conus. Malignant papillomatous cyst of the breast. Differential diagnosis. Operation. Paralytic ileus from cryptogenic peritonitis. Old ununited Colles' fracture. Open reduction. Nailing of the fragments. Left facial nerve paralysis of congenital origin. Macrognathia. Spino-facial nerve anastomosis. Paralysis of the right facial nerve the result of a basal skull fracture. Fracture of the styloid process. Spino-facial nerve anastomosis. Intra-uterine fibroid. Hysterectomy. Paget's cancer. Carcinoma of the rectum with ulceration. Iliac sigmoidostomy. Radical excision. Sarcoma of humerus. Cerebellar tumor. Suboccipital decompression. Congenital luxation of the patella. Reduction. Excavation of a groove in the femur for its lodgment. Plastic operation and imbrication of joint capsule to hold it in its new position. Recurrent luxation of left patella. Internal imbricating flap operation. Paralysis of right leg with a flail-joint at the ankle. Arthrodesis. Postoperative ventral hernia following appendiceal abscess. Imbrication operation.

Materia Medica for Nurses. By A. S. Blumgarten, M.D. Published by the Macmillan Company, New York, 1914. Price, \$2.50.

Blumgarten's "Materia Medica for Nurses" is a complete but not technical work of about 650 pages. Little attention is given to therapeutics as his object is "to develop intelligent trained observers of the effect of drugs and to enable nurses to administer medicines accurately." It is more extensive than any other work of its kind due to added chapters on "Prescription Writing" and on most of the "New and Unofficial Remedies" in common use. Probably the most important addition is the lengthy chapter on "Solutions." This heading includes original and easy methods of making accurate solutions and tables on "Saturation Points" and on "Usual Strength of Standard Solutions." The chapter on "Anesthesia" has the usual simple, outline arrangement, but is probably most open to criticism in inaccuracy in some of the details. As a whole, this book is much less technical than former works, being well arranged, easily understood and excelling in its simplicity.

E. H. W.

Practical Medicine Series. Vol. 3. The Eye, Ear, Nose and Throat. Series 1914. The Year Book, publishers, Chicago. Price, \$1.50.

The present volume is up to the usual standard of excellence. Its chief value lies in the fact that the foreign journals as well as some of the less important American journals are fully covered. For the first time, the literature of the hypophysis is fully discussed, as it is now well recognized that

most of the operations on this gland fall naturally into the hands of those rhinologists whose training makes the intranasal route familiar ground for them. Preysing's transsphenoidal route, by way of the base of the skull, is described and the results of seven cases given. (His experience now covers 15 successful cases).

One of the most interesting portions of the book is devoted to the various uses of bacteriology in ear, nose and throat diseases. Many articles are reviewed on the use of autogenous vaccines, polyvalent vaccines, stock vaccines, etc. These signs tend to show that the modern well trained specialist must have a thorough and practical knowledge of this science.

The work of Greenfield Sluder and Holmes, on the treatment of intractable trifacial neuralgias by means of injections into the sphenopalatine ganglion, attracts the attention which by its great originality it deserves. The method is an intranasal one, and naturally will fall largely into the hands of the rhinologist.

Mayer, of New York, following out the well-known work of several German investigators, has very successfully treated 93 cases of dysmenorrhea by the local application of cocaine to the proper centers in the nose. This subject has been greatly neglected in America and his results may succeed in arousing new interest in the subject. H. H.

Genito-Urinary Surgery. By Thomson Walker. Surgical Diseases and Injuries of the Genito-Urinary Organs. With 27 color and 21 black-and-white plates and 279 illustrations in the text. 8 vo., 790 pages. Price, \$7.00. Funk & Wagnalls Company, publishers, New York.

The preeminent position of Mr. Thomson Walker in British urology has made his authorship of a comprehensive work embodying the fruits of his experience, observations and studies decidedly welcome and desirable. If Mr. Walker is an authority the present work casts aside any doubt of his position. It alone would earn him the title.

Throughout the book is attractive, the subject matter admirably handled, showing maturity of thought and definiteness of purpose. The text is well balanced, never ambiguous or half baked. The writer treads upon firm ground and this effect of stability is borne upon the reader and carried throughout. The style is splendid. The descriptions are vivid and clear and show a gifted mastery of language for this purpose.

The whole ground of genito-urinary surgery is covered. Some of the rarer conditions receive scarcely more than categorical mention. Portions might have been curtailed or omitted. It would seem that no work on urinary diseases is complete unless it contains a detailed description of the method of passing a urethral instrument with the usual illustrations, though probably the technique is never learned from a book. The best features in Mr. Walker's book are his descriptions of gross morbid anatomy, his systematic grouping and discussion of symptoms and his handling of the therapy, which though brief is clear, and whatever recommendations are made are the result of the author's extensive experience and a critical study and analysis of his own results. Liberal notice is given of the work of others both at home and abroad and their methods and results freely quoted. Certain developments of urological practice in this country might have been given some consideration. Beer's high-frequency treatment of bladder papillomata just receives mention. Buerger's urethroscope is not mentioned. Young's prostatic punch for median bar obstruction is not mentioned.

On the whole the work creates a very favorable and lasting impression. M. S.

Local Anesthesia: Its Scientific Basis and Practical Use. By Professor Dr. Heinrich Braun, Obermedizinalrat and Director of the Kgl. Hospital at Zwickau, Germany. Translated and edited by Percy Shields, M.D., A.C.S., Cincinnati, Ohio, from the third revised German edition. Octavo, 399 pages, with 215 illustrations in black and colors. Cloth, \$4.25, net. Lea & Febiger, publishers, Philadelphia and New York, 1914.

The last ten years have brought forth no advances in surgery whose importance can compare with that of local and regional anesthesia. These methods are of great value to the hospital and the surgical dispensary, but to the general practitioner, often working alone and unaided, without the possibility of administering a general anesthetic, nor of caring for his patients afterwards, they are inestimable, and open fields to him which without their aid would remain closed.

Braun is justly called "the father of local anesthesia." His monograph is a classic. It is one of those rare books, true friends in need, to which we never look for help in vain. The book embodies the labors of years. Many of the methods are original with the writer, all of them have been tried and tested by him in person. Shields' translation is from the third German edition and contains descriptions of the newer anesthetic methods, blocking of the trigeminus and its branches, anesthesia in goitre operations, etc. It is well printed and illustrated. We miss some of the expressions of Braun's personal opinion and experience, and also the bibliography contained in the German original.

Publisher and translator deserve thanks for presenting an English speaking public with this extraordinarily useful book. We hope that the translation may serve to reintroduce methods to America, many of which, originating here with men like Matas, Cushing and Crile have been the words of prophets unheeded in their own country. The book should be in the hands of every medical practitioner.

L. E.

A History of Laryngology and Rhinology. By Jonathan Wright, M.D., Director of the Department of Laboratories, New York Postgraduate Medical School and Hospital. Second edition, revised and enlarged. Octavo, 357 pages. Lea & Febiger, Philadelphia and New York, 1914.

I do not remember reading a book that has given me more pleasure and kept me more interested until the end than this book of Jonathan Wright. While purporting to be a history of rhinology and laryngology it is, in reality, a concise review of the art of general medicine, and of the history of civilization and culture, so that it is well worth reading even by those who do not make a specialty of nose and throat diseases. It is not a mere summing up of events with accompanying dates ("a lifeless chronicle of events is a dreary work which is to be avoided if possible"), but a critical review of the stages that education, both general and medical, has passed through since the remotest ages. Along with this we have many flashes of dry humor and kindly criticism, which makes the reading of this book highly entertaining. Our pride may suffer an occasional bruise when we find that the things which we consider products of our superior intellects and advanced scientific attainments were thought of and tried hundreds of years ago, and discarded as worthless, as, no doubt, many of our prized systems and theories of today will be in a hundred years from now.

Wright says, on page 179: "Since the revolt of Cullen and his predecessors from the old humoral pathology, we have been practically upon a basis of the solidism which he had carried to

such extremes. It is only within the last few decades that we have begun to perceive that all such divisions are impossible, all regions, all organs, all tissues, all of the body fluids are too intimately associated, one with the other, to allow us to single out, in disease, any single unit as the entity exclusively deranged; but we may note a tendency in the recent trend of research in the problems of immunity for the pendulum to swing back again, after nearly two hundred years, to the domains of humoral physiology and pathology."

While the attainment of an absolute zero may be possible in physics, absolute attainments in medicine seem to be out of the question. In fact, the reading of Wright's book brings us a realization of the truth of Carlyle's saying: "It is in general more profitable to reckon up our defects than to boast of our attainments." Wright says, on page 46, "Some of the passages in the writings of these Aesclepiadae seem ridiculous to us, but we should keep constantly in mind the charity which our successors in their histories will have to extend to the productions of our own times—each critic is careful to point out the errors Hippocrates committed in not being in accord with the doctrines of the critic's own times, which are now as obsolete as those of Hippocrates."

Whereas the Hebrews had but 903 possible ways of dying the Parsees invented 99,999 diseases with which to plague mankind. The "Zend-Avesta" prefers those who practice spells and incantations, "not an anomalous proceeding in ecclesiastical advice of later times as well." The ancients showed the same weakness as the moderns in calling in foreign rather than native physicians. The therapeutics gathered by Pliny from the Magi show us the source of many of the remedies still in vogue in our rural communities. When we come to the end of the last century and the beginning of this we feel that we are amongst friends and acquaintances again. The recital of the birth of our modern rhinology and laryngology is fascinating, and the tale of the invention of the laryngoscope shows how an idea that is floating in the atmosphere may suddenly crystallize in some wholly unexpected spot. To chasten our spirit and show us how empty are the pretences of some of our contemporaries Wright tells us: "Very frequently a new triumph of dexterity or invention in any department of surgery leads to the erroneous assumption that because a difficulty of technic has been overcome, a new era in surgical therapy has been inaugurated." In a similar spirit we are told that: "The predecessors of Morgagni were too much occupied with rare cases and fabulous histories, the curiosities of medicine," a failing which has remained with us to the present day.

If I may be allowed to make a suggestion it would be that the author translate the quotations from the Greek and Latin sources. Many of us have long since lost the ability to turn these into English, especially when confronted with the "Hog-Latin and Goat-greek" in which many of the authors clothed their medical lore.

The book needs but an introduction to speedily win its way into the reader's favor, and I am sure that most of us will lay the book down with the firm resolve to read it again.

M. W. F.

SOCIETY REPORT

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During September the following meetings were held:

Section on Medicine. Tuesday, September 1.

1. Frenkel's Re-education Exercises in Tabetic Ataxia. Wm. Kenny. Discussed by W. F. Schaller and J. M. Wolfsohn.

2. Demonstration of Hypophyseal Tumor and Brain Tumor. H. C. Neffziger.

3. Clinical Value of Percussion of the Skull. W. F. Beerman.

General Meeting. Tuesday, September 8.

1. Experiences with Deep Alcohol Injections in the Treatment of Trigeminal Neuralgia. Sol Hyman. Discussed by L. Eloesser, H. C. Naffziger, H. M. Sherman and C. G. Kuhlman.

Section on Eye, Ear, Nose and Throat. Tuesday, September 22.

1. Demonstration of Cases:

A. Lupus involving hard and soft palate. G. P. Wintermute.

B. Frontal sinus—Killian operation. J. J. Kingwell.

C. Man who is able by muscular effort alone to evert upper lid of either eye. H. Y. McNaught.

2. Paper on Orbital Headaches. Percival Dolman. Discussed by A. S. Green and M. W. Fredrick.

Section on Urology. Tuesday, September 29.

1. Remarks concerning the Use of Vaccines in Genito-Urinary Diseases. A. B. Grosse. Discussed by M. Krotoszyner and Harry E. Alderson.

2. Combined Treatment of Syphilis with Salvarsan and Mercury. G. W. Hartman. Discussed by A. B. Grosse, M. Krotoszyner and W. E. Stevens.

3. Surgical Treatment of Tubercular Kidney. W. P. Willard.

THE TWELFTH ANNUAL MEETING OF THE PACIFIC ASSOCIATION OF RAILWAY SURGEONS—SAN FRANCISCO, CAL., 1914.

Officers for 1913-14: Dr. Geo. R. Carson, president, San Francisco; Dr. R. T. Legge, 1st vice-president, McCloud; Dr. Ethan H. Smith, 2nd vice-president, San Francisco; Dr. E. M. Keys, treasurer, Alameda; Dr. Louis P. Howe, secretary, San Francisco.

Committee of Arrangements: Dr. A. Miles Taylor, San Francisco; Dr. A. W. Morton, San Francisco; Dr. Louis P. Howe, San Francisco.

PROGRAM.

First Session—2:00 P. M., August 28th.

"Consideration of Fractures and Open Treatment of same." Ethan H. Smith, San Francisco.

"Complications Following Fractures." A. W. Morton, San Francisco.

"Remarks on a Recent Examination of the Eyes and Ears of Railroad Employees." W. F. Southard, San Francisco.

"Artificial Pneumothorax by Rib Resection Method in the Treatment of Acute and Chronic Pulmonary Lesions. Preliminary Report." G. Burton Turner, San Francisco.

"Crile's Method of Anoci-Association in Railway Surgery." Chas. R. Harry, Stockton.

Second Session—2:00 P. M., August 29th.

"Medical Impressions on a European Trip." W. Taylor Cummins, San Francisco.

"Remarks on Septic Anemia." J. Wilson Shiels, San Francisco.

"Tuberculosis of Spine. Special Reference to

the Albee & Hibbs Operation." H. H. Markel, San Francisco.

The following applications for membership were presented and unanimously accepted:

H. R. Parker, Dunsmuir; Jo Hamilton, Fruitvale; Conrad Wiel, Jas. A. Black, C. O. Southard, W. G. Harder, E. J. Ghidella, Fred W. Lux, Ada S. Morton, San Francisco; F. Scott, D. A. Marsan, Tiburon; Waid J. Stone, San Rafael; E. G. Bennett, Kirt Urban, Petaluma; S. S. Bogle, P. A. Meneray, Santa Rosa; C. W. Weaver, Healdsburg; C. C. Ledyard, Cloverdale; F. T. Gunn, Willits; J. J. Spottiswood, Mill Valley; J. E. McCue, Larkspur; O. W. Jones, San Anselmo; E. W. Sawyer, Wendling; Rae Felt, Lloyd Bryan, Eureka; L. A. Anthony, Novato; Mark Myers, San Francisco; J. A. Young, Alton; H. G. Gross, Eureka; P. T. Phillips, Santa Cruz; W. A. Phillips, Brookdale; A. U. Fuson, San Francisco.

The following officers were elected: President, Dr. A. Miles Taylor, San Francisco; 1st vice-president, S. E. D. Pinniger, Tracy; 2nd vice-president, W. Taylor Cummins, San Francisco; secretary, Louis P. Howe, re-elected; treasurer, E. M. Keys, re-elected.

A resolution was passed that we extend a hearty invitation to the American Association of Railway Surgeons to meet in San Francisco in 1915, and use every effort to accomplish this end.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Nonofficial Remedies.

HEPCO FLOUR. A flour prepared from the soya bean. It is claimed that clinical trial has shown that the small percentage of carbohydrates in Hepco Flour is in the main not sugar-producing, and that it therefore is a suitable food material in cases in which carbohydrates are contraindicated, as in diabetes, amylaceous dyspepsia, etc. Hepco Flour is also sold in the form of biscuits as Hepco Dodgers and a granulated "breakfast food" as Hepco Grits. Waukesha Health Products Company, Waukesha, Wis. (Jour. A. M. A., Sept. 26, 1914, p. 1113).

VACCINE VIRUS NOT CONTAMINATED.

A study of cases shows that vaccinal tetanus is not due to contaminated vaccine virus. Further, since the law regulating the sale of biologic products in 1902 went into effect, there have been examined in the Hygienic Laboratory of the U. S. Public Health Service over 1,500,000 doses of vaccine virus without a single specimen having been found to contain tetanus spores. Also, experiments indicate that tetanus will not be produced even if the virus used contains tetanus spores. Most cases of vaccinal tetanus are due to infection after vaccination (Jour. A. M. A., Sept. 19, 1914, p. 1032).

DOSE OF DIPHTHERIA ANTITOXIN. While 3,000 units, the dose given in the Pharmacopoeia, probably is a sufficient initial dose in many cases, this quantity is not enough to satisfy the factor of safety. There is a growing opinion that no case of diphtheria should receive less than 10,000

units as the initial dose (Jour. A. M. A., Sept. 5, 1914, p. 873).

ANTISEPTIC ACTION OF HEXAMETHYLENAMIN. The former opinion that hexamethylenamin possesses antiseptic action independently of the liberation of formaldehyde, was an assumption not founded on reliable experimental evidence. The recent investigations of Burnam, Hanzlik and others have shown that its action as an antiseptic depends on the decomposition into formaldehyde and ammonia which occurs only in an acid medium (Jour. A. M. A., Sept. 12, 1914, p. 962).

SODIUM VERSUS POTASSIUM SALTS. The probable shortage of potassium salts due to the war suggests that sodium salts may in most cases be substituted without disadvantage. In general potassium salts have no marked superiority over the corresponding sodium salts. While the potassium compounds are said to be more active and to possess a more diuretic effect, the sodium salts are less depressing to the heart and in some instances less disagreeable to the taste. Sodium iodide, sodium bromide, sodium acetate, sodium citrate, etc., are just as effective as the corresponding potassium salts (Jour. A. M. A., Sept. 19, 1914, p. 1034).

VACCINATION AGAINST SMALLPOX AND TYPHOID. In view of the war, a general revaccination of the population of Paris has been ordered and huge quantities of anti-typhoid serum have been prepared (Jour. A. M. A., Sept. 5, 1914, p. 873).

VALUE OF TALCUM POWDERS. The action of talcum powders on the skin depends on their protective and dehydrating properties. On the other hand they tend to form crusts and pastes, due to mixture of the powder with sweat or other secretions. There is doubt if the boric acid in talcum powders can exert any antiseptic action. The action of the salicylated talcum powder of the National Formulary, though containing 10 per cent. of boric acid, depends on its salicylic acid. Commercial talcum powders contain small amounts of various antiseptics and perfuming agents and have little value from a therapeutic point of view (Jour. A. M. A., Sept. 26, 1914, p. 1129).

LIQUID SOAP. The following economical formula has been proposed. It may be flavored and colored to suit: Sodium hydroxid 55 gm., potassium hydroxid 65 gm., cottonseed oil 800 c.c., alcohol 500 c.c. and water to make 5,000 c.c. (Jour. A. M. A., Sept. 26, 1914, p. 1129).

SIGNIFICANCE OF THE WORD "LUTIN." The word "lutein" has long been applied in physiologic chemistry to designate a group of fat-coloring matters which occur in nature and which have more recently also been given the general designation of lipochromes. As a rule the use of the term has been restricted to the yellow coloring-matter which develops in the ovarian structures. It is unfortunate that lately various preparations of desiccated corpora lutea from animals are being sold as lutein (Jour. A. M. A., Sept. 29, 1914, p. 1119).

DIGALEN OMITTED FROM N. N. R. In view of increased extravagance regarding the claims made for Digalen by the Hoffman-LaRoche Chemical Works the Council on Pharmacy and Chemistry decided to investigate the present eligibility of Digalen. Examination demonstrated that the asserted presence in Digalen of "amorphous digitoxin" was not substantiated by evidence, that Digalen and Digalen Tablets were not constant in composition and action and that the claim that Digalen causes less gastric disturbances than digitoxin was unfounded. While the manufacturers promised to hold the claim that Digalen contained "amorphous digitoxin" in abeyance, they

refused to concede the variable composition of Digalen and reasserted that Digalen was less liable to cause gastric irritation than other digitalis preparations. In view of the overwhelming evidence that Digalen is variable in action and in composition and that it produces the same gastric disturbances as other digitalis preparations, the Council voted that Digalen and Digalen Tablets be omitted from N. N. R. (Jour. A. M. A., Sept. 5, 1914, p. 881).

ANGIER'S EMULSION. A report of the Council on Pharmacy and Chemistry points out that when Angier's Emulsion, Angier Chemical Co., Boston, Mass., was first put on the market it was advertised as a "food-medicine" and an "Ideal Substitute for Cod Liver Oil." Although the manufacturers now advertise this product as a laxative and state it to be "purely mechanical in its action" they still mingle with the new ones the old claims of "tonic and reconstructive merits" and thus attempt to perpetuate the erroneous belief that the preparation has nutritive value. As to the identity of the petroleum product contained in the preparation, regarding which the advertising circulars make contradictory statements, the A. M. A. Chemical Laboratory reports that this has all the properties of soft yellow petrolatum (Jour. A. M. A., Sept. 12, 1914, p. 962).

ANGIER'S THROAT TABLETS. These tablets are stated to be composed essentially of elm bark and petroleum and yet are claimed to "promote appetite and aid digestion." The A. M. A. Chemical Laboratory reports the tablets to contain about 12 per cent. of soft yellow petrolatum, like that found in Angier's Emulsion (Jour. A. M. A., Sept. 12, 1914, p. 964).

SANATOGEN. Testimonials for Sanatogen are published which show good results in cerebral concussion, alcoholic gastritis, anemia, etc. The patient is given a chance to recover by rest, a proper diet and "Sanatogen"—and the recovery is attributed to Sanatogen. Based on some biologic experiments the exploiters of Sanatogen assert that "Sanatogen acts as a strong stimulus as far as the recuperative powers of the blood are concerned." These experiments were repeated by Professor A. J. Carlson of the University of Chicago, using Sanatogen, casein, casein and glycerophosphates, milk and crackers and milk. Professor Carlson's experiments show that the effects produced by Sanatogen are not different from those obtained when casein, casein and glycerophosphates, milk and crackers and milk are used (Jour. A. M. A., Sept. 26, 1914, p. 1127).

A SUGGESTION REGARDING CO-OPERATION.

To the Editor of the State Journal:

Dear Sir:—The successful fight of your Journal against proprietary and quack medicine advertisements in medical journals suggests a way by which one of the largest abuses in medicine could be controlled if not abolished.

Druggists and drug houses have become too largely the tools of manufacturers of nostrums and proprietary articles, and indeed in apparent jealousy of the commercial success of these manufacturers, they have all too frequently made and displayed "cure-alls" of their own. The result is that when our patients go into a so-called high-class drug store with a prescription and a diagnosis, they are likely to be confronted on the first counter with attractively gotten up bottles labeled with the druggist's name and brazen statement, nearly enough true to escape the law, that the bottle contains a palatable and attractive remedy for cough, or rheumatism, or gout, or stomach disorder, etc., etc., covering all the ordinary ailments. The remedy has all the qualities which

Osler says makes the red tincture of cinchona so valuable a drug—a beautiful color, a striking taste and a high degree of harmlessness (sometimes). It presents one other point, not without its psychological advantage, the relation of size of bottle to price. The druggist's remedy is sure to be in a larger bottle than the patient's prescription calls for, and for a less price. He leaves the store with his little bottle, after having a half hour's time to study the carefully exposed specialties of the druggist. What do you think will happen when two days elapse and the cold or stomach ache is no better? What is the most vivid picture in the patient's mind but the row of patent medicines with their alluring labels or the more fascinating druggist's substitute!

What chance has a doctor against the trained and insidious advertiser who has taken advantage of the patient to plant a few seeds of discontent! We will not discuss the chances, for that is not the point, but why not correct the objectionable debasement of the pharmacist's trade? Would surgeons tolerate hospital halls and operating-rooms lined with advertisements of sure cures for appendicitis, tumors, etc.? Why is not the pharmacist just the same necessary sort of a tool of the physician that an operating-room is of a surgeon? Why allow drug houses and druggists to prostitute the business of the true pharmacist?

The remedy is exceedingly simple and it would help the profession to apply it. Good pharmacists do not want to be under the thumb of manufacturers of proprietary stuff, and pride themselves on the high class prescription work they do. Why not publish in our Journal monthly, at the expense of the local society, a "white list" of druggists who agree not to sell any of their own specialties for ailments with names and symptoms in general circulation; not to handle any proprietary medicines, and not to compound any prescriptions calling for such remedies? Printed and dated lists could be supplied each member of the local society with his monthly announcement of meetings, and these lists could be handed to patients who inquire about druggists.

You will ask whether there are druggists who would agree to this. I took occasion before the fire when this idea first suggested itself to me to investigate the matter, and found among six or seven of the leading druggists and in all the first-class clinics that less than 3 per cent. of the prescriptions called for objectionable remedies. In other words, druggists have to order proprietary stuff in jobber's packages, often of one dozen, in order to put a few ounces of some remedy in a prescription, and they dare not refuse to compound such prescriptions for fear of losing family trade and offending the doctor. The jobber puts the screws on, hoping to get the druggist to help him advertise by making him buy proprietaries in large packages. Not a single high-class druggist offered any objection to the plan.

If it seems to you worth advocating, a committee of the Society could easily arrange it on a simple working basis. PHILIP KING BROWN.

WESTERN ORTHOPEDIC CLUB.

In response to a call issued by Dr. Harry M. Sherman, a meeting was held in San Francisco on February 22, 1914, and the Western Orthopedic Club was organized.

The following physicians interested in orthopedic surgery were invited to attend and constituted the original membership:

Dr. Carl C. Crane, 2371 Union St., San Francisco; Dr. Leo Eloesser, Butler Building, San Francisco; Dr. Leonard Ely, Stanford University Medical School, San Francisco; Dr. Arthur Fisher, City of Paris Building, San Francisco; Dr. H. H. Markel, 1270 Fourth Ave., San Francisco; Dr. George McClesney, Union Square Building, San Francisco; Dr. Joseph Milton, First National Bank Building,

Oakland; Dr. Harry M. Sherman, Union Square Building, San Francisco; Dr. Ethan Smith, Phelan Building, San Francisco; Dr. James T. Watkins, Union Square Building, San Francisco; Dr. Walter Baldwin, Butler Building, San Francisco.

The meetings are to be held at intervals of six weeks with the presentation of a paper on orthopedic surgery, followed by informal discussion.

Semi-annual clinical meetings at the hospitals and clinics of the members are to be arranged.

The following officers of the new society were selected to hold office for one year: President, Dr. Harry M. Sherman; secretary, Dr. Walter I. Baldwin.

At its first regular meeting, the Society was entertained in Oakland, California, by Dr. Joseph L. Milton, who ably outlined the subject of Tuberculous Hip Disease. The paper was discussed by Dr. James T. Watkins.

The interest shown seems to insure success for this new society for the advancement of orthopedic surgery on the Pacific Coast.

STAINING TUBERCLE BACILLUS.

To the Editor of the State Journal:

Dear Sir:—Believing that the counter staining in this method is original, I have called it my modification of the Mori improved stain for the tubercle bacillus.

The Mori method is as follows: "The carbol-fuchsin solution is made with 0.5 gm. fuchsin, 10 c.c. absolute alcohol, 2.5 gm. phenol and 100 c.c. distilled water. The fuchsin is dissolved in the alcohol, the phenol is then added, and then the water is stirred in a little at a time, and the mixture is then set aside for twenty-four hours and then filtered. Differentiation is done with a one per cent. solution of sulphuric acid, and the contrast staining with a 1 to 4000 solution of methylene blue. Each fluid is applied in turn for ten or fifteen minutes, washing in water between."

The Mori method is an exact and practical method of staining the bacillus of tuberculosis. It gives a beautiful result, does away with stained fingers and apparatus, and above all is a great time saver.

The modification I suggest consists in using a saturated alcoholic solution of methylene blue for one minute for the counter staining, instead of the 1/4000 solution of same for 10 to 15 minutes as in the Mori method.

The improvement I believe to be obvious: The saving of the 10 or 15 minutes more required by the former method.

L. M. RYAN, B. S., M. D., Banning, Calif.

RICE WANTED.

W. C. Rice, representing himself to be a deputy state organizer of the Order of Owls, is at present soliciting among the physicians around the bay, for charter membership in that order.

He claims to be organizing a lodge, has all the credentials, receipts, and a list of names of fake charter members, and wants two examining physicians in each community. He is an imposter, and the home lodge offers \$50 reward for his arrest. He wears large gold Masonic pin on coat lapel. If seen, hold and wire Alameda Police Department, Alameda, Cal.

NEW MEMBERS.

Bixby, W. E., Sebastopol.

DEATHS.

Mason, Wilton Marcellus, Lodi, Cal. (died in San Francisco).

Turner, G. Burton, San Francisco.

Davis, Wm. Henry, Monterey, Cal. (died in San Francisco).

Kuhlman, Chas. Geo., San Francisco.

Boyson, Thos., Plymouth, Calif.

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XII DECEMBER, 1914. No. 12

EDITORIAL NOTES

CHRISTMAS GREETINGS.

This number of the JOURNAL completes the twelfth volume and is the end of another year. It has been a very large year indeed and filled with surprises and awful shocks. But we, on this edge of the world, can be very thankful for our position and for the fair degree of prosperity that has been vouchsafed to us. Trying times are with us and trying days are to come. To every member the JOURNAL wishes a Christmas present of courage and encouragement; look steadily toward the future as dispassionately as possible and remember our duties and our rewards in the knowledge of things accomplished, suffering aided and good done. We will all have to economize on some of our luxuries, but let us do it cheerfully and be thankful for the gift of peace that has been given to us to enjoy; just now it is a very rare and precious present.

NEVADA STATE ASSOCIATION.

At its last annual meeting, the Nevada State Medical Association made the CALIFORNIA STATE JOURNAL OF MEDICINE its official publication and beginning with the first of the year, the Association is to subscribe for it for each of its members. Elsewhere will be found a list of the officers, minutes of the last meeting, and some Nevada notes. There will be a special department for Nevada items and the JOURNAL will be glad to receive news items, etc., relating to happenings in that state. Also, the papers read at their annual meeting will appear as they are received and opportunity presents. There has always existed a very friendly feeling between California and our

smaller but very progressive neighbor on the east and it is to be hoped that this present arrangement will serve to increase that feeling as time goes by.

A. M. A. MEETING IN JUNE; ARRANGEMENTS COMMITTEE.

Once more, a gentle reminder not to forget that the American Medical Association is to meet in San Francisco in the third week of June 1915; Monday, the 21st of June the House of Delegates has its opening session and Tuesday, the 22nd, the regular sessions of the Association begin their work. The General Session, open to the public, will be held in one of the down town theatres but all the scientific sessions, section meetings, etc., will thereafter be held in the Auditorium, at the Civic Center. Wednesday has been set aside as a memorial day, or public health day, to commemorate the work of the various scientists, living and dead, that led to the possibility of "digging the ditch." The arrangement of the program for that day has been placed in the hands of the President, Dr. Vaughan, the President-Elect, Dr. Rodman, and the Editor of the *Journal A. M. A.*, Dr. Simmons; probably the various exercises, ceremonies, etc., that may be arranged for that day will be held at the Exposition grounds, though nothing has as yet been announced. Dr. Philip Mills Jones, who is Chairman of the Trustees' Committee of Arrangements for the session in San Francisco, has appointed the local Committee of Arrangements as follows: Dr. J. Henry Barbat, Dr. Sol Hyman, Dr. William P. Lucas, Dr. Herbert C. Moffitt, Dr. Emmet Rixford, and Dr. George Somers. This Committee has met and elected Dr. Moffitt as Chairman and Dr. Sol Hyman, Secretary. It will appoint all the sub-committees and it is urged upon every member of the Society in San Francisco, to contribute his services if called upon to aid the committee; it will require quite a goodly number of active members to handle the situation properly.

TO COUNTY SECRETARIES.

As you know, the assessment per member for next year—1915—is fixed at \$6.00 and is payable in January. All members must be reported and their assessment paid before March 1st or they lose their membership and their medical defense as from the 1st of January. In other words, all membership terminates on the 31st of December, but for convenience and practicability, members are carried as such till March 1st. At the close of this year, our State Society is bigger and closer knit than ever before, having nearly 2500 members. Notify your members that their dues are payable January 1st and that they must not forget this matter; it is of vital importance to them not to be delinquent when March 1st comes along; it may cost any one of them several hundred dollars, for suits for damages for alleged malpractice are increasing rather than decreasing. Send in your report of members and the remittance for their assessment as early in the year as you can, and thus greatly help the work of the State Society office.

THERE IS A PUBLICATION COMMITTEE.

A recent difference of opinion in the matter of the time of publication of a contribution sent in by a member of the Society disclosed the fact that some of our members do not know that there is a Publication Committee; there is, and a very active and important one; there has been ever since the JOURNAL began publication and it has always done splendid work, though most quietly and unostentatiously. Any member having cause of complaint is specially requested to address the Publication Committee, or any member of it, and he may rest assured that his complaint will be immediately considered by the Committee as a whole. In the case above mentioned, as soon as it came to the attention of a member of the Publication Committee that complaint had been uttered by a member, a meeting of the Committee was called and the gentlemen interested were requested to meet with the Committee and discuss the matter. It was fully gone into by the entire Committee. The editor of any periodical which is a popular medium of publicity, is always the object of denunciation by a number of people. Nearly everyone who submits an article for publication thinks it ought to be published in the very next issue; also, he thinks his article is of the very greatest value and importance. This is not always the case. Three classes of papers are submitted to the JOURNAL; those read at the meetings of the State Society, which are the property of the Society and must be published unless decided otherwise by the Publication Committee; those read at County Society meetings and sent in officially with the request for publication, and these are always published; and lastly, those written for publication but not read at any official medical society meeting. Of the last class, there are not many and they are submitted to two or three members of the Committee to read and pass an opinion upon; sometimes when there is doubt they go to all the members of the Committee. The Editor and the members of the Committee would like to publish all the good papers submitted immediately; but it is impossible to do so. Some papers are not as good as others, but we all dislike to reject a paper unless it is necessary and so a number of them are accepted and held for a time, waiting for the pressure of other and perhaps more timely papers to let up a bit and so give an opportunity to give them publicity. Thus it is that, as in every publication office, some contributions are held back for many months, though with our JOURNAL about a year is the longest time an article has been held back. And a delay in publication is not necessarily a reflection on the quality of the paper so delayed. Many things enter into the problem of publication. There may be an unusual quantity of matter on a certain subject or from contributors in a certain section of the state, in which event some of the papers must be held back to secure a more even distribution in the contents of the JOURNAL from month to month. The responsible editor of any periodical knows that he is and always will be subjected to a certain amount of harsh criticism; and also, he knows that practically all of it is

unjust. We are doing the best we can to get all worthy contributions into the JOURNAL and as promptly as may be, but any contributor who thinks that he has cause for complaint is earnestly requested to address the Committee, or any member of it. The names of the members of the Committee are printed at the top of the first column of reading matter in every issue of the JOURNAL.

A WORD ON PAPERS.

While on the subject of contributions to the JOURNAL, it may not be out of place to reiterate some suggestions to authors; to some, they may seem trivial, but they are all very essential to acceptance and prompt consideration.

All manuscripts *must* be typewritten and on one side only of the sheet of paper.

Always leave a margin at the left of the page, at least an inch in width.

Never "single space"; always use the double space in typewriting a paper.

Read over the finished paper carefully and make sure of the correct spelling of proper names, publications quoted, etc.

Always spell words out in full; do not abbreviate like "temp." for temperature. Do not try any fancy stunts with "reviled spelling," such as "tho" and "thru," etc.

Buy a medical dictionary and satisfy yourself that all diphthongs, except for the terminal plural, are no longer used.

In making a quotation, be sure that the quotation marks are placed at the end as well as the beginning of the portion quoted.

Never roll a manuscript; send it flat or folded as many times as you like, but do not roll it. If you want to know why, just roll up some sheets of paper, leave them tightly rolled for a few days and then try to handle them!

Never paste cuts or illustrations on sheets in the middle of a paper. Send them in separately, properly marked with the legend you think should go under them, with your name on the back, and indicate in the paper where you would like them to go.

Put your name and city on the first sheet under the title of your paper. (It would surprise you a whole lot to know how many contributors forget to do this little thing!).

Number the sheets consecutively from first to last.

Case histories should be as carefully written as any other portion of a manuscript and no abbreviations used.

Ordinary bed-side charts, as frequently sent in, cannot be reproduced but have to be redrawn. Illustrations are seldom necessary if a paper is well and clearly written.

Don't think that your paper, unless it has some remarkable news value, will appear in the next issue after you send it in; we always keep enough papers in type to print at least three issues of the JOURNAL. But on this account do not hold your paper back, the sooner you send it in, the sooner it will be read and passed upon.

THE RIGHT SPIRIT AND THE RIGHT KIND OF HELP.

Here (*infra*) is a letter from an ex-president of the Society that tells its own story. This is the kind of co-operation that counts a whole lot. We have begged men to refer to the JOURNAL; to let us know if they are going to get an automobile; to correspond with advertisers, etc. Doubtless at the present time there are a number of members who will buy automobiles in the course of the next few months; if they would let us know, and let us know what kind of car they had in mind, we could get that car for them without it costing them a dollar more—and we could also get some more advertising for the JOURNAL. It is your own JOURNAL and by helping it you only help yourself. Can you not see it? Will you not do it? We have a number of new advertisements, in the last few months; Uncle Sam, Battle Creek, Betz (whose advertising copy is carefully gone over in the A. M. A. office), Calso water, and a number of others. Why not look them up in the JOURNAL and see what is offered you? And let the advertiser know!

"I want to compliment you on the Journal; I think you have had some dandy editorials lately and I think your criticism of the members of our Society for not taking advantage of the opportunity of helping the Journal is a very good criticism. It is probably a matter of indifference on the part of the members of the Society. I freely acknowledge it has been so with me and after reading the editorial I immediately filled out a coupon to the Battle Creek Sanitarium and to the Uncle Sam Breakfast Food and sent them in. I would suggest that it might not be a bad idea if you think well of it to call attention either editorially or some way in the Journal to new advertisements or special advertisements or any good opportunity for young men locating or exchanges of practice or anything of that sort.

"I speak of these things because I presume the average member is like myself, he rarely looks at the advertisements unless there is some particular thing that he is looking up for himself and the average busy practitioner if he wants an instrument, or a new automobile, is liable to go to those sources most convenient for him and it never occurs to him to look in the Journal and see how he can help the Journal along. If we could encourage them to look upon the Journal as a clearing house for the medical profession of the state irrespective of the membership, it would help very materially in encouraging those who have the acting management of the Journal, if it added to their labors."

GUARD YOUR MEMBERSHIP!

While it is true that "crime 46" did not pass and become a law, the very large number of people who voted for it show one of two things—either that a large number of voters think there should be little or no control over the qualifications of those who are to minister to the sick or injured, or that a great many people are ignorant of what they are voting for. The tendency of the times is sociologic unrest; resentment of any sort of con-

trol; let the individual do as he pleases. A large number of physicians are being licensed under this law who could not have been licensed under the former law. The barriers to the unqualified will probably be still further lowered, unless all signs fail. The time is rapidly coming, as the JOURNAL has said repeatedly during the last three years, when the only distinguishing mark of a properly trained physician will be membership in his County Medical Society. Therefore, every county unit should be very careful in the scrutiny of applicants for membership and should be equally careful in the scrutiny of the conduct of its present members. We must see that our societies are made up only of physicians of high character and good professional conduct; and this for the protection of all of us. The State Society office keeps track of all physicians who obtain licenses in this state and is constantly adding to the personal information about them. Every county society should send the names of applicants to the State Society office for investigation before they are elected to membership. It is, of course, possible that the law will be allowed to remain as it is; but it is doubtful. In all probability, greater "liberality" will be amended into the law by the next legislature, and that will make it still more imperative for us to guard well our county units.

UNREST IN NEW YORK STATE.

A circular has been received, which was apparently used as a campaign document in New York, as it is unsigned and has nothing to indicate where it comes from or who is responsible for it. It is nevertheless interesting as it shows so clearly that the spirit of unrest, of determination to remove standards of requirements in professional equipment is as rampant in New York, almost, as it is on the extreme western side of the continent. Also, the quotation from Governor Glynn's remarks, if true, and there is no reason to believe otherwise, is illuminating in the way of showing how *some* governors look at a high medical standard as protection for the people. The circular is, in part, as follows:

The Attention of Physicians is Directed to the Following:

Cheiropractic, Naturopathic, Osteopathic and Christian Science bills were presented at Albany last year. Two of them, which would have broken down every barrier which now prevents the practice of medicine by unqualified persons, were passed.

It was the courageous vetoes of Governor Glynn which alone saved the medical standards of which New York State has been so proud.

In speaking on this subject before the sanitary officers of the state in September, Governor Glynn said:

"While I am governor, no man will practice medicine in this state by simply hanging out the sign 'Healer.' I am opposed to 'heelers' in politics and I am against 'healers' in medicine, my friends.

"I believe in the preservation of high stand-

ards of medical education. If the legislature of this state has one great responsibility it is to preserve the medical standard of the State, and my efforts will always be directed to that same end."

ORIGINAL ARTICLES

"PRIMARY SARCOMA OF THE STOMACH; PRELIMINARY REPORT OF A CASE TREATED BY PARTIAL GASTRECTOMY."*

By THOMAS W. HUNTINGTON, M. D., San Francisco.

Frazier¹ states that primary sarcoma of the stomach was first discovered by Bruch, in 1857. Virchow, in 1864, referred to three cases, and Tilger, in 1893, was able to collect only 20 cases. Hesse,² in 1912, collected 235 cases of sarcoma of the stomach. Of this series, 160 were primary. His paper is exhaustive, containing much statistical information, and a very complete bibliography.

Scudder³ reports one advanced case treated, successfully, by a three-stage operation. From various sources I have found reference to about 200 cases, some of which were not operated; others were discovered at autopsy, and it is not certain that all occurred, primarily, in the stomach.

Mayo-Robson⁴ is of the opinion that more careful scrutiny of gastric malignant cases would appreciably augment the number of primary sarcomata. Nevertheless, the disease must be regarded as of exceedingly rare occurrence. In a single case, recorded in the publications of the Mayo clinic, Dr. Wm. J. Mayo⁵ states that "Sarcoma of the pylorus is so rare as to be a surgical curiosity."

No cases have been observed at the University of California or Stanford University clinics. McCleave, of Berkeley, reports one doubtful late case which was studied at autopsy.

Dr. W. I. Terry, of San Francisco, will report a sarcoma of the stomach treated by total gastrectomy.

Howard⁶ has collected 11 cases of primary sarcoma of the esophagus, and Erdman⁷ reports a case of annular sarcoma of the cardia which he removed successfully.

W. J. Mayo reports, by letter, that two cases have occurred at the Mayo clinic. One operated upon by himself, a man 38 years of age; duration of symptoms, 10 years; resection of stomach, tumor size of head, lying in pelvis. Patient died in six months from recurrence.

The second case, operated by Chas. Mayo; a man 43 years of age; duration of symptoms, 10 to 12 years; resection of stomach for intrinsic tumor, size not stated; mixo-sarcoma; patient well at the end of one year. The duration of symptoms, in both cases, 10 years or over, is peculiarly significant.

There seems to be no special predilection for sex. Early writers regarded it as an affection of the very young, ranging from two or three to 20 years.

Later observers find it distributed through all periods up to 70. Very many cases have occurred in the fourth, fifth and sixth decades.

Nearly all varieties of sarcoma are represented in a given series. The round-cell, spindle-cell, and mixed round- and spindle-cell types preponderate. Robson⁴ states that the former occurs in 60 per cent. of cases. The growth originates uniformly in the sub-mucous layer, differing in this respect from carcinoma. It may occur in any portion of the viscus wall, from the cardia to the pylorus, though its favorite location is at the pyloric end. The tumor may be diffuse, presenting a more or less flattened appearance with a marked thickening of the involved area; or it may occur as a pedunculated affair, growing extrinsically from its original seat until it assumes formidable proportions. In the same manner, it may occur intrinsically and, in time, occupy a large portion of the visceral cavity.

Whether gastric ulcer is an important factor in sarcoma, as it certainly is in carcinoma of the stomach, is not fully determined. Incipient cases seem rarely to have been detected and studied, and doubtless, in those far advanced antecedent conditions, such as chronic ulcer, will have lost their identity or have become wholly obliterated. In my own case, the significance of a co-existing ulcer is obvious. There is, however, a doubt as to whether or not the ulcer, in this case, was post-hoc or propter-hoc. The clinical history and symptomatology present no distinctive features apart from those of cancer or chronic ulcer.

It is a matter of regret that evidence bearing upon end results in gastric sarcoma, treated surgically, is very meagre. Frazier¹ tabulates 29 operated cases with four immediate deaths. Twelve of this series were not traced. Of the 13 remaining cases, there were two recurrences at the end of eight months and three years, respectively. One was well at the end of 14 years; two, at the end of two years; two, at the end of one year; and two, at the end of nine months, and four cases were too recent to possess any statistical value.

The following case history is unique in that it relates, so far as I know, the earliest operation for sarcoma of the stomach on record. It furnishes an excellent text for the comments which are hereto appended:

Mrs. P. W., resident of San Francisco; age 67 years; consulted me first, June 21, 1914.

Family history: Mother died at the age of 42 years from breast cancer. Father died of chronic tuberculosis at the age of 52 years. Patient has three children, the youngest being 38 years of age. Collateral history, unknown.

Previous history: As a young girl was well and strong and has remained in that condition until about three years ago. Never had any serious illnesses, but three years ago began to notice that ingestion of meat caused some distress which led to an elimination of meat diet in later years. Has never had typhoid fever. No icterus.

Present history: Weight, 147 pounds. During the past six months, patient has lost six pounds. Six months ago, began complaining of distress in her stomach with slight nausea accompanied by a tendency to regurgitation of acid fluid. Never vomits her food, but an hour or two after eating, experiences a feeling of distress in the upper epigastrium. Has never noticed any discoloration of stools. Has daily bowel movements spontaneously. Patient feels certain that food remains in the stomach over an undue period. Is troubled with eruc-

*Read before the San Francisco County Medical Society, August 18, 1914.

tations of gas. Sleeps well and experiences no stomach distress during the night. There is evidence of moderate pyloric obstruction.

Patient looks slightly anemic, though her color is fairly good. Pulse rate, 78; red blood count, 3,900,000; hemoglobin index, 80; blood pressure, 143. Heart's action is normal. Abdomen is rounded and uniformly dome-like and resonant throughout. Superficial vessels are noticeable in the lower quadrants and slightly in the upper. At time of examination, several hours after eating, there was a definite splash in the gastric region, on palpation. No mass can be felt at any point and lymph nodes are absent. An area of tenderness, not very decisive, was found in the epigastric region, a little to the right of the median line and extending over a limited area, the size of the palm. Otherwise, abdominal examination is negative. Pelvic examination omitted. A marked excess of free and combined hydrochloric acid in gastric contents after test meal.

X-ray examination by Dr. Davenport is as follows: A marked residue in the stomach at six hours, also a persistent outline of the duodenum with bismuth at six hours, and it is still manifest in the twenty-four hour plate.

Dr. Davenport writes: "There are, probably, adhesions in or around the duodenum which cause this retention. Fluoroscopic examination shows stomach normal in size and quite movable in the upper region and at the fundus, but less so in the pyloric region. Peristalsis, active. Picture appears to be that of disease in the pyloric region rather than in the stomach itself."

A clinical study of the case impressed me deeply with the idea that the patient's symptoms proceeded from a somewhat unusual origin. The patient's mother died of cancer of the breast; a fact which, to my mind, merits very careful consideration, despite opinions to the contrary of many authorities, that heredity cuts little, if any figure, in the incidence of malignancy in a given individual.

There was lack of definiteness in the clinical picture. The main trouble seemed to have originated within a comparatively short interval extending over a period of six months, during which time her symptoms were not especially distressing. There was never any vomiting of food or evidences of hemorrhage in the stools. She suffered very little pain and only moderate distress, after the ingestion of solid food. Her appetite was fairly well maintained and her physical condition was such as not to attract attention, save in a very general way. There was a notable drop in the patient's strength and vigor.

The feature of the case which seemed of special significance was the existence of tenderness on pressure at or near the pyloric region. This was constant, and on the increase during the past two months. The patient's daughter was more insistent upon a careful analysis of the situation than was the patient herself.

The epigastric symptoms were constant, but pyloric insufficiency existed only in a comparatively moderate degree. There was, also, a slight loss of weight, six pounds in six months. The possibility of malignancy became more and more manifest in the course of the examination. So deeply impressed was I regarding this feature of the case that I repeatedly warned the patient's daughter regarding it.

Operation was advised and readily accepted. This was done at the Lane Hospital, June 24, 1914, three days after my first interview. Under gas ether anesthesia, the abdomen was opened through the inner border of the right rectus. The gall bladder was found to be quite large and slightly adherent to the omentum at its fundus. It was of normal color and free from calculi. It was readily collapsible. After separating one or two omental adhesions at the pylorus, an interesting condition was disclosed. On the stomach side of the pylorus

there was discovered a rounded mass about the size of a cherry lying apparently in the sub-mucous and muscular coat of the viscus. Between the examining fingers, the peritoneum being tightly drawn over the mass, it presented a whitish, uniformly globular tumor. It was distinctly hard and resistant, therein not conforming to the tissue which is usually found as an inflammatory base of a chronic ulcer. The lumen of the pylorus was definitely narrowed, although I doubt if it could be recorded as a typical example of pyloric stenosis. Consequently, nothing short of a pylorotomy and partial gastrectomy was indicated. I sent for the daughter and obtained assent to the foregoing procedure.

About one-fifth of the stomach and fully an inch of the duodenum were included in the resection.

The time of the operation was shortened and the procedure greatly facilitated by the use of the Payr clamp, which I found to be a most valuable accessory in this undertaking. The divided ends of the stomach wall and the duodenum were enfolded and the suture lines reinforced. A formal posterior gastro-jejunostomy was then completed.

A word regarding the technic of this procedure is justifiable. Wm. J. Mayo has called attention repeatedly to the danger of post-operative hemorrhage proceeding from the lower margin of the anastomotic stomach incision. This incident can be avoided by the following technic: After adjusting the first one-half of the outer concentric suture, the stomach and jejunal margins were joined in the following manner: A double armed chromic suture was inserted through both walls to the middle point of the thread, the needle being passed first through the lower angle of the incision. Subsequently, both needles are passed in opposite directions through the engaged walls and drawn snugly (to be held by an assistant, temporarily).

From thence to the opposite angle of the incision, this technic was continued, stitches being placed about three-sixteenths of an inch apart, after the manner of a harness maker in the stitching of tugs. On reaching the opposite angle of the incision, the double suture is tied securely and one thread is cut away. This double suture line includes all the vessels which are apt to bleed actively for the few hours following operation.

The succeeding steps were carried out in the conventional way. During the entire undertaking there was no appreciable loss of blood.

Patient returned to bed in excellent condition. At no time was there any evidence of post-operative hemorrhage into the stomach, the patient thereby escaping all the distressing incidents from this source.

Her recovery was rapid and without incident. Patient left the hospital in splendid condition at the end of ten days.

On July 21, 1914, 27 days after operation, patient reported at the office. Weight, 138 pounds, a gain of seven pounds since she left the hospital. Eats chicken, fish, chops, and vegetables without pain or distress. Bowels move spontaneously. Has a good appetite and relishes her food. Strength is gradually increasing. Her general appearance is good.

August 18, 1914, patient reports as follows: Continues to improve and her condition in every sense is satisfactory.

Pathological findings: On sectioning the gross specimen, at time of operation, the pyloric orifice was found slightly contracted and rigid. In the mucous membrane, corresponding to the inner convex surface of the tumor mass, there was a small ulcer, the size of a split pea, apparently not very active. Otherwise the mucous membrane of the excised area was normal. The tumor was found to be a globular encapsulated mass, the size of a cherry, lying between the mucous and peritoneal coverings. On dividing it, it presented a yellowish white appearance, uniform in consistency throughout. The tumor shrank rapidly after division.

There was slight induration of the immediate surrounding structures.

The pathologist's report is as follows: (Laboratory of Prof. Wm. Ophuls, Stanford University Medical Department.) June 25, 1914. "Tumor, about the size of a bean, under the mucous membrane. Fairly well circumscribed; cuts rather firmly; cut sections, smooth, seem leathery, yellowish white in color.

"Section shows tumor to consist of very numerous, round, spindle-cells. Many areas show arrangement of cells in whorls. Here and there are collections of small, round cells. In places, cells in large numbers, invade the sub-mucosa. Some fibrous tissue present. Tumor is very cellular. Sections of tissue, taken at each extremity of excised specimen, show no invasion by tumor nodule.

"Diagnosis: Fibro-sarcoma of the stomach.

"(Signed) R. H. Major."

This report has, more recently, been confirmed by Professor Ophuls.

One of the disheartening features in this connection lies in the fact that very rarely is any type of gastric malignancy recognized by the diagnostician during that brief but critical period when radical measures offer much encouragement; this in spite of the fact that the progress of the disease is insidious and unceasing and its disastrous ending inevitable. Thousands of patients are, annually, subjected to late exploratory or palliative operations with little or no other purpose than to demonstrate the fallacy of unduly protracted investigation and over-faith in routine measures.

In view of this fact I am impelled to make an earnest appeal to the profession for a change of policy when dealing with suspected and border line cases.

To the injunction, which is, certainly, official, "*Observe and observe and observe,*" there must be appended the final and not less authoritative mandate, "*Observe wisely.*" This means, if it means anything, fine appreciation of clinical evidence and large faith in an early inspection of the living pathology.

It happens altogether too frequently that patients, after a long and disheartening medical experience, pallid and attenuated, exhausted by starvation and hemorrhage, presenting a tumor mass which is unmistakable, are referred for operation. Too rarely does it happen that patients suffering from any type of gastric malignancy are surrendered by the internist while there is more than a ghastly hope of radical cure.

Despite the vast amount of time and energy and money that have been devoted to investigation of malignancy, one fact of clinical value has been determined, and but one, viz: that cancer is curable, and only curable when seen in its early stage. It is perfectly obvious that the diagnostician, in the presence of obscure visceral disease, must have his ear close to the ground to catch the faintest whisper of impending trouble. Furthermore, he should realize that a diagnostic incision may lead the way to an achievement.

In my opinion, closer communion and more thorough co-operation between the patient, the internist and the surgeon is to be encouraged.

It is an extremely delicate and often difficult task to convince the patient that his greatest, per-

haps his only safety, lies in immediate operative interference. The average individual is wary of radical measures. During the early stages of a condition marked by obscure but suggestive symptoms, he is optimistic and uniformly pleads implicit faith in drugs, diet, a trip to the springs and a general medical regime. It seems reasonable that the surgeon's point of view could be presented to the patient more forcefully and convincingly by the surgeon than by the medical attendant or the consulting internist.

I am deeply impressed with the idea that when resort to surgery is suggested, he who is to assume the greater responsibility should have an early as well as the last word as to its availability.

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Discussion.

Dr. Paul Campiche: I would like to congratulate Dr. Huntington on his interesting paper and ask just one or two questions. In Dr. Huntington's case, we see that there was a small nodule near the pylorus. If I remember well, the books teach us that sarcoma of the stomach is generally on the body and rarely at the ends of the stomach. I would like to ask Dr. Huntington if he made a vaginal examination in this case, or if, during the operation, he took the precaution to pass his hand into the pelvis and examine the ovaries. It has been shown that in young women sarcoma of the ovaries and of the stomach are often found together, and there is a possibility that this might be a secondary growth and not a primary. At least the patient should be kept under observation for a year before the case can be pronounced a primary sarcoma.

Dr. J. Rosenstirn: I listened with a great deal of pleasure to Dr. Huntington's very interesting paper, but I regret that he did not bring a microscopical section here for the examination of this tumor. The term "fibro-sarcoma" is a rather indefinite one, and I would like to see how much of a fibroma and how much of sarcoma the microscopical picture would show. The case is a very rare one, especially as to the early diagnosis and the character of the tumor. Dr. Huntington may well be proud of the excellent result of his operation. It would be well worth while, in the publication of this case, which undoubtedly will follow, to add a figure illustrating the microscopical findings, which we would have liked very much to see here tonight.

Dr. Huntington, closing discussion: There is very little to be said further. In regard to the question of Dr. Campiche, no pelvic examination was made prior to operation, as stated. During the operation the usual pelvic examination through the operative wound was made. There was absolutely nothing to be detected in the lower portion of the abdomen. The appendix was also carefully examined and found to be, as far as I could determine, normal.

With regard to the microscopical slides, I took the precaution to have them verified by Dr. Ophuls. It did not occur to me to exhibit the slides here. I should be glad to assist any one in having them exhibited if desired. They are preserved at the

Stanford laboratory and I am sure Dr. Ophuls will demonstrate them.

With regard to the term "fibro-sarcoma," I cannot quite visualize the point made by Dr. Rosenstirn. "Fibro-sarcoma" is a well recognized clearly identified pathological entity. We do not need to go to the stomach wall for it. We find it in the ovary, in the uterus, and various other organs of the body. This, I think, is the first time I have ever heard the question raised as to the possibility of an error being made. Dr. Ophuls is thoroughly convinced of the malignancy of the tumor. The mass was apparently enclosed within a capsule, which is always a stumbling block, in my opinion, because we rarely find the original cell structure confined within the limits of the so-called capsule. Here we found that the cell structure had traversed the capsule and had invaded the tissue in its immediate environment.

BONE SPLINTING IN VERTEBRAL TUBERCULOSIS.

A YEAR'S WORK AT THE CHILDREN'S HOSPITAL,
SAN FRANCISCO.

By HARRY M. SHERMAN, M. D., F. A. C. S., and
GEORGE J. McCHESNEY, M. D., F. A. C. S., San
Francisco.

An innovation in the rather trite treatment of vertebral tuberculosis is entitled to special consideration because of the fact that it is an innovation, for one thing, but chiefly because of the serious character of the diseased condition and the great need of an improvement in our methods of treatment. Up to the time when Hibbs and Albee practically simultaneously promulgated their operations, the treatment of tuberculosis of the bodies of the vertebrae—the most common form of bone tuberculosis in children—was still limited to the old-as-the-disease methods of braces and plaster of paris jackets and recumbency. All of these aimed to provide local rest—the so-called immobilization—and no more, and then the recession of the diseased process and the supervention of healing was expected to follow with improvement in the general health of the patient. Local rest for the skeleton of a living animal was known to be an anatomical and physiological impossibility; local rest by brace or splint or jacket was known to be a mechanical impossibility; but the means were the only ones we had, and the partial rest they gave was found in a fair percentage of instances to have a therapeutic value with which we had to be satisfied; in a certain proportion of the cases, however, the disease progressed in spite of all that we could do.

Now the orthopedic surgeon is not really fond of braces. They always represent to him a pitifully incompetent external skeletal aid, acknowledgedly cumbersome and irksome—taking hold of

the denser and heavier bone through the less dense and softer skin and fat and muscles, to the detriment of the latter if adequate support is given to the former. The ideal brace would be invisible, impalpable, imponderable, indestructible, innocuous and absolutely efficient; the braces which we have are hideous, heavy, hurtful and incompetent, and prone always to wear out or to break.

Efforts to escape the external apparatus are evidence of the viewpoint of the surgeon, but the two solitary attempts, that of wiring the spines and laminae—done by two or three operators—and that of putting in light steel rods along the laminae—done only by one—had each the fatal defect of overlooking the fact that bone is a living tissue and will absorb under a pressure that produces a local acute anemia.

With the suggestions of Hibbs and of Albee has come the nearest approach to the ideal brace; each provides an internal splinting of the affected vertebrae, a bracing that is both invisible, impalpable and imponderable, and each method avoids the error just mentioned, for each recognizes that bone is a living tissue and indeed counts on that very fact for a successful outcome. They each have done more than this, for we credit each with having copied the natural healing process of bone tuberculosis in planning their procedures, and having obeyed surgical laws in their technic. In bone tuberculosis, as the pathology ceases and repair is inaugurated, new bone is built in to restore, so far as it may, the original bony frame (Nichols and Adami). In each of the plans mentioned, osteogenesis is especially invited to add strength and rigidity to the affected parts of the skeleton. In the normal repair of tuberculosis-affected joints, a more or less complete fusing of the component bone occurs. In each of the plans a fusing or synostosing of the affected vertebrae is especially brought about. Finally, in devising their technic for securing these results, they have both carefully avoided encroaching upon the affected regions, thus obeying the surgical rule of not invading a tuberculous region unless there is a reasonable expectation of being able to remove it all.

It is not often that two new plans of treating a well-known condition are offered to the surgeon at practically the same time; especially is it remarkable that each plan recognizes and meets the same and all the conditions of success, though each in its own separate way. From having a deficiency of therapeutic measures, we seemed suddenly to have a superabundance, and the difficulty was to decide the abstract value of each and the concrete value of the better.

The Hibbs method uses the spinous processes and the laminae of the vertebrae—all of that part which is posterior to the intervertebral articulations—for the purpose. The spinous processes, stripped of periosteum, are half cut, half broken at

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

their bases, and then bent down so that the tip of the upper is in osseous contact with the infraction of the lower; the laminae have strips cut from their borders, but left attached by one end. The strips are then bent down so as to be in contact with the upper border of the lamina below. Over this multiple infraction the periosteum and soft tissues are closely sutured. This is done, not only to the affected bones, but included two sound bones above and two sound bones below those. As healing occurs the fusing of all these bony parts is expected to take place, binding the individual bones together. Finally, a bony plaque is expected to be formed, as wide as and as thick as the laminae plus the thickness of the spines, and this is expected to increase in thickness and strength as work is put upon it, and to carry the superincumbent body weight, to prevent increase of the kyphos and to cure by immobilization.

The Albee plan is in one way simpler, in that it makes a less formidable surgical attack on the vertebrae. The spinous processes are split from tip to base and the soft parts between them cut to the same extent. Into the cleft thus made an implant of bone, cut from the tibia, is put and fastened, and it, as in the Hibbs plan, extends two sound vertebrae above and below the affected region. Healing finds the affected vertebrae, and four others—two above and two below—bound by the union of this bony implant and the spinous processes; and again, the carrying of weight, the prevention of increase of deformity, and the cure of the disease is looked for.

Now in the posterior lever spinal brace of Fayette Taylor—the prototype of all mechanically competent spinal braces—the endeavor was to transfer the work from the vertebral bodies, which were diseased, to the articular and transverse processes by extending the spine, as a whole, at the point of disease, for the articular processes usually escaped the infection. As levers the brace had the segments of the spine above and below the kyphos.

Looked at in terms of the brace, the Hibbs method has little to commend it. The fusing of the part of the ring of the vertebral arch behind the articular processes gives practically no leverage power, for the power—the fused laminae and spines—is too near the fulcrum—the articular processes—unless the plaque of bone resulting from the method develops sufficiently to stand a severe cross strain, kyphos increase can occur, and with it perpetuation of the infection. (Fig. 1.) (Fig. 3.)

Looked at in terms of the brace, the Albee plan is the better, for it makes a body of bone, by fusion of the spines, on a plane definitely posterior to the articular processes, so that some leverage is possible. (Fig. 2.) (Fig. 3.)

These considerations are, to a certain extent, theoretic; but each of us had seen operations and cases after operations by the two originators, so that we had some definite clinical guides, apart from theory, to help us. We, therefore, selected the Hibbs method for those cases in which the disease affected the dorsal spine, for here the overlapping or imbrication of the spinous processes

Fig. 1.

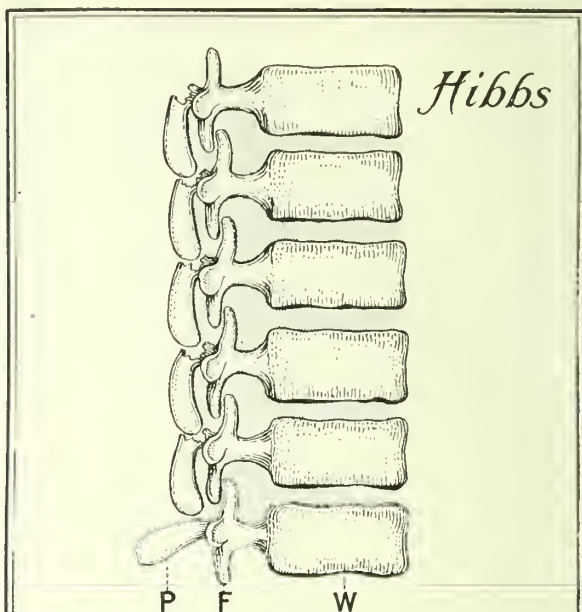


Fig. 2.

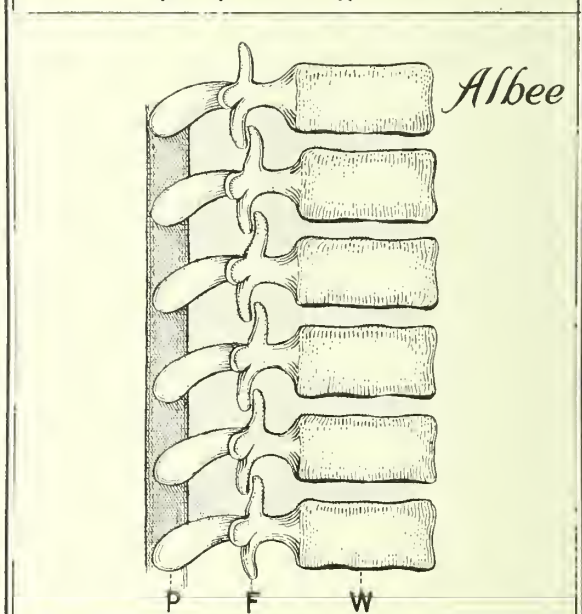
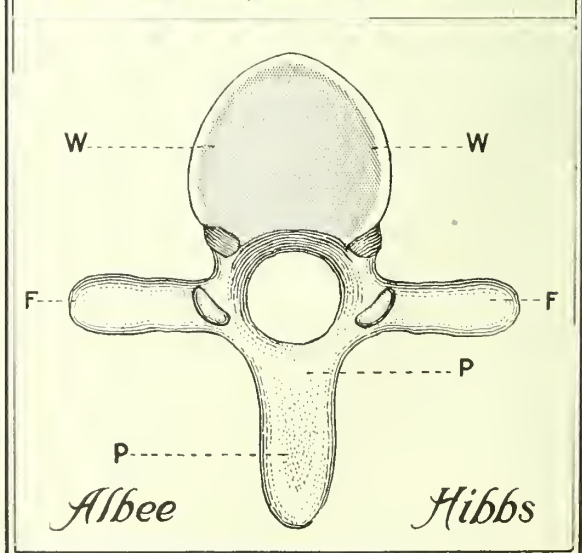


Fig. 3.



lent themselves most readily to that plan. The Albee technic we reserved for cervico-dorsal, dorso-lumbar, lumbar and lumbo-sacral lesions. With this plan we have done thirty operations on twenty-seven children, three children who had double lesions having a Hibbs done in the dorsal and an Albee in the lumbar region at the same time.

Of these all but one healed normally. That one was a child with a septic sinus in the operation field, and from it the wound became infected, the Albee graft necrosed and had to come out, but the ultimate result, so far as spinal reinforcement is concerned, is most satisfactory.

One died of tuberculous meningitis five weeks after a normal healing, and a second died eight months after the operation of sepsis, following an unwarrantable invasion of a psoas abscess before he was brought to us, but our operation healed normally, and the Albee implant was never extruded.

All the rest are living, but with otherwise varying results. Seven of the twenty-five are in good condition and up and about without artificial support. These apparently count definitely for the operation. Among them are included the three children upon whom the double operations were done. Nine others are up and about and in satisfactory condition, but are still in jackets, which we dare not remove. These count neither for nor against the operation. Five of them had had the Hibbs operation and four had had the Albee.

Two are up and about without jackets, but their condition is not satisfactory in that they do not gain in weight and strength. They are all Hibbs cases, and they certainly do not count for any operation.

Five have been put back in recumbency on stretchers and in jackets. Of these three are Albee and two are Hibbs cases, but we are not at all sure that they count against any operation.

In two old paraplegias upon whom we operated in the hope of having a recession of symptoms, no change has occurred. In one child an oncoming paraplegia cleared up, but in another a paraplegia developed after the operation.

In three instances tuberculous abscesses disappeared after the operation; in two cases abscesses remained unchanged, and one child had an abscess appear after a normal healing of the operation wound.

In six children an increase in the size or acuity of the kyphos has been noted. Of these four are Hibbs cases and two are Albee.

Taking the whole number again into consideration, seven out of twenty-five—twenty-eight per cent.—have *apparently* been hastened back to health and have a lesser likelihood of recurrence of the disease. If one remembers that we operated on every child in our care, with no effort to select cases, that the original condition is one of the most serious of surgical conditions, with both immediate and remote menaces, this is not a bad showing. It is a far better showing than many another now well recognized surgical procedure has had in its earlier days.

What do we think we have learned from this series, which has, by both of us, been most sedulously watched?

We are going to answer the question in a very sweeping way, at the risk of seeming zealous, but with, of course, the right to change our opinions later if need be.

The child who can be most helped is the child with the least serious lesion. That is a truism. Therefore, operate as soon as the diagnosis is made in the early case.

The child who has the most serious condition, bad deformity, abscess, paraplegia, malformation, has the most to gain and the least to lose by an operation. This again is a truism. Therefore, operate upon these.

All between these extremes have varying needs of help. Do not refuse it to any of them.

If our twenty-eight per cent. does not deceive us, fewer and fewer will advance to the middle and later stages, and the percentage of healings will increase as the earlier cases, not weighted by long illness and complications, are taken care of.

Which of the two methods do we at present think the better? We are both more impressed with the Albee technic, and have done some two operations, putting two tibial transplants, one on either side of the spinous processes, instead of one in a cleft in the spinous processes. These atypical Albee cases we are not including in the report because they have been too recently done. One thing more we think we shall later ask to demonstrate, and that is the cutting, by a chisel or osteotomy, from the subcutaneous surface of the tibia, of a graft which, as it is being cut, curls up like a big shaving, so that it can be fitted to the curve of any kyphos without bending or breaking. This will obviate one of the minor difficulties in the technic, but one which has seemed at times to have a major value, for when the transplant is straight and must lie in a curved bed it must be bent to fit and it sometimes breaks. These infractions should act like ordinary fractures, but our transverse radiograms do not show that they always do so. If the graft bends as it is being cut, the need of manual bending will be obviated, and so the infraction will be avoided. This will, by eliminating a possible weak part, add to the potential strength.

But, finally and always, we must remember that we are dealing with tuberculosis, and tuberculosis is—tuberculosis. No present-day method of treatment is a cure. Of this class no patient can be operated upon and sent away without careful after-treatment and with any expectation of assured healing. These operations are, we think, most valuable methods of treatment. This, and nothing more.

Illustrations

Fig. 1. Shows, diagrammatically, the Hibbs method of contacting the spinous processes. The relative positions of power, fulcrum and weight are shown.

Fig. 2. Shows, diagrammatically, the Albee method of implanting a tibial graft in the spinous processes. The relative positions of power, fulcrum and weight are shown.

Fig. 3. View of a diagrammatic vertebra, showing the relative positions of power, fulcrum and weight in the Albee and in the Hibbs methods.

INFANTILE AND JUVENILE TABES.*

By HANS BARKAN, M. D., San Francisco.

The adult type of tabes is, if not diagnosed by the neurologist first, often discovered by the ophthalmologist, as the cases afflicted with optic atrophy come to him because of failing vision. As the optic atrophy, if it occurs at all, appears in the vast majority of cases as one of the very earliest signs, we frequently have the opportunity of being the first to suspect a tabes and of confirming the diagnosis by the finding of Argyll-Robertson pupil, lost patellar and Achilles reflexes, and Romberg. The total per cent. of tabetics first diagnosed as such in an eye clinic is hard to state accurately, but probably amounts to about 20%. Of all tabetics from twenty to forty per cent. (this last Uhtoff's estimate) develop optic atrophy and as this is early and the other early signs already enumerated not appreciable to the patient, I think twenty per cent. a safe estimate as regards tabetics primarily diagnosed as such in an eye clinic. This number rises to a very much higher percentage if we consider the disease picture of tabes in infants and juveniles; for in these the percentage of optic atrophy is from ninety to ninety-five and the other tabetic symptoms, such as various crises, and above all the motor instability, absent, or at most only indicated. The children complain of failing vision only and are usually brought to the ophthalmologist. Of these cases thirty-four had been published up to the year 1903 and fifty-one up to 1908. Since that time twenty-two more cases have been described, of which the last six were published by me in the *Wiener Klin. Woch.*, April 11, 1913, with the title "Zur Frage der Infantilen und Juvenilen Tabes." Since then I have had the opportunity of examining six further cases, members of one family—three male and three female children. The case histories of all the cases observed follow:

I. The parents are alive, well and deny lues. Patient is the only child, aged nine. No previous sickness, but is at present suffering with enuresis nocturnal. No physical signs of hereditary lues. She has noticed for some time that she sees nothing with her right eye. Examination shows: right pupil a trifle larger than the left. When the eyes are directed to the extreme right the pupillary difference is somewhat increased. The right pupil does not react directly to light. The consensual reaction is conserved. The left pupil reacts well. The right disc is quite white, with sharply outlined borders, vessels of normal caliber. The rest of the fundus normal. The left optic disc is also much paler than normal, sharply defined, and shows normal vessels. Neurological examination: no impairment of sensibility. Both patellar reflexes present, right somewhat sluggish. Both Achilles reflexes absent. Wassermann reaction positive, but negative in the parents. Vision: right, movement of the hand before the eye—visual field concentrically narrowed: of the left, 20/30, Jäger 1. In the course of the next nine months vision of the right eye decreased to perception of light in one meter and on the left eye to 20/200, Jäger 5 read with difficulty. The patellar reflexes absent. In the next six months the vision dropped to the perception of light in thirty centimeters right eye, and the counting of figures at 1½ meters on the left eye. Both discs shining white, vessels normal.

the right pupil somewhat larger than the left, no reaction to light, the left pupil reacting fairly well: reaction to accommodation preserved. Did not return to the clinic after this last examination.

Case II. Girl, fifteen years of age. Adipose, of an infantile physical and mental type. No signs of hereditary syphilis. The patient is the second of seven children, of whom the first four are alive and well. The fifth died at eighteen months, cause of death unknown. The sixth and seventh children were premature in the eighth month, and died in twenty-four hours. Lues is denied by both parents. The patient herself was well up to the age of thirteen. Her first trouble at that time was difficulty in reading, occasional dizziness, and getting tired rather more rapidly than usual. For a year she noticed that the left eye was losing its sight, but otherwise felt quite normal. In the last three years she has gained a good deal of weight. The vision is—right eye 20/30, with 1½ Sph. with 3, Jäger 1. Left eye—fingers counted in 2½ meters. Left pupil reacts neither to light nor accommodation, right pupil reacts normally. The left fundus shows a chalky white disc, sharply defined vessels, normal caliber. Right fundus shows slight temporal paling of the disc, otherwise normal. The left visual field examined by the Bjerrum method, is markedly and concentrically narrowed for white and colors, and above and nasally shows a sector-shaped defect reaching nearly to the fixation point. Neurological examination: patellar and Achilles reflexes absent. Romberg indicated, no ataxia. Hypalgesia from the lower border of the third rib to the thirteenth. Hypalgesia of both calves, but not of the feet. Neurological examination of the mother: Patellar and Achilles reflexes absent, indication of Romberg, Argyll-Robertson pupil, fundus normal. No parasthesia. Wassermann positive in the patient, as well as in the mother.

Case III. Boy of sixteen. Right pupil larger than left, quadrilateral in shape. Light reaction absent. Left eye shows slight ciliary injection, normal cornea, pupillary border bound to anterior lens capsule by multiple adhesions. In spite of specific treatment, ciliary injection progressed, the picture finally developing into one of a typical iridocyclitis, with oedema of the iris, precipitates on Descemet's membrane, and clouding of the aqueous. Fundus both eyes normal. Visual field normal. Vision: right eye—20/20, left 20/70; both patellar reflexes weakened, left more than right. Achilles reflex absent, Romberg scarcely indicated. The father: absent patellar and Achilles reflexes, Argyll-Robertson pupil, Romberg indicated, positive Wassermann, one of the best amateur billiard players of Vienna. The mother died in 1912 with cerebral hemorrhage. Wassermann in the patient was positive.

The next three cases observed were on the neurological clinic of Prof. v. Wagner, where Dr. W. M. Schacherl was kind enough to afford me the opportunity of studying and reporting these cases with mine. The father of these three children acquired syphilis sixteen years ago. He is forty years old. Primary atrophy of both discs. Both pupils are large, do not react to light, show slight amount of anisocoria. Patellar and Achilles reflexes absent. Wassermann positive. Mother shows no symptoms of any organic nervous affection; Wassermann positive. Oldest child, boy of eleven, shows atrophic disc of the primary type, the right in a more advanced stage. The right pupil larger than the left, both round, reaction to light absent. Patellar reflex scarcely to be elicited, Achilles reflex increased. Wassermann positive. The second child, a girl of nine years, complains the last two years of loss of vision, shows slight paling of both discs. The right pupil is somewhat larger than the left, both react well to light. The right patellar reflex elicited with great difficulty, left is normal. Achilles reflex normal, all other

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reflexes normal. Wassermann positive. The youngest child, a boy of seven years, who feels perfectly well, shows slight paling of both discs, more of the left than the right, pupillary reaction very sluggish. All reflexes normal: Wassermann positive. All three are strikingly intelligent children of graceful physical build, of normal height and weight. Besides the tabetic symptoms mentioned, the only other abnormalities are enlarged, hard, easily palpable cervical, axillary and inguinal lymph nodes. These cases have been reported before, as mentioned: to them I here add the case histories of the following six children, all members of one family. The two oldest were sisters and twins aged nineteen. These came to the clinic because of failing eyesight. The others were one girl aged seventeen, one boy aged fifteen, one boy aged fourteen, one boy aged eleven. The two oldest girls showed primary atrophy of both discs with normal vessels and otherwise normal fundus. In both cases patellar and Achilles reflexes were absent. No parasthesias. No complaint except failing eyesight. The other four children showed Argyll-Robertson. Of these, the two oldest a slight paling of both discs as well as absent Achilles reflexes. The two youngest were normal in every respect except for Argyll-Robertson. The mother had recently died in an insane asylum. Cause of her confinement there was not to be ascertained. The father is alive and well, shows Argyll-Robertson, patellar and Achilles reflexes absent, Romberg indicated. Wassermann of the father as well as of all six children positive.

Summing up these cases:

1. Enuresis nocturna, genuine atrophy of right disc, later also of the left. Argyll-Robertson, patellar and Achilles reflexes absent, no Romberg, no parasthesias, no ataxia, Wassermann positive.
2. Case of genuine atrophy, one-sided. Argyll-Robertson one-sided, patellar reflex absent, Romberg indicated, no ataxia, regionary parasthesias, suggestion of infantile type, Wassermann positive, as well as in the mother, who also showed the cardinal signs of beginning tabes.
3. Case of Argyll-Robertson, weakened patellar and Achilles reflexes. Romberg indicated, no ataxia, no optic atrophy (so far an exception to the rule), no parasthesias, Wassermann positive, as also in the father.
- 4 and 5. Genuine optic atrophy, unequal pupils, weakened patellar reflex.
6. Slight paling of both discs. In all children (4-5-6) Wassermann positive, as well as in father and mother (4-5-6 members of one family).
- 7 and 8. Optic atrophy, Argyll-Robertson, loss of patellar and Achilles reflexes. Wassermann positive.
- 9, 10, 11, 12. Argyll-Robertson. Wassermann positive (7-8-9-10-11-12 members of one family). Wassermann positive in father, who also showed cardinal signs of tabes. Father died in an insane asylum.

To be sharply differentiated from these cases are those of juvenile paralysis and tabo-paralysis. Mott, in his monograph on "Congenital Syphilis and Feeble-Mindedness" points out the main characteristics of these types: that these cases are not rare is evidenced by the fact that 2 per cent. of all cases of general paralysis dying at Claybury Asylum during the last twelve years have been of the juvenile form and due to congenital syphilis. Tabes, on the other hand, he states "to be very rare." In the frequent cases of general paralysis and tabo-paralysis, the children, at about the age of puberty, develop syphilis hereditaria tarda, manifested often by interstitial keratitis, nerve-deafness, skin and visceral lesions. They are usually markedly infantile, both in bodily and mental development, this

state being frequently associated with various grades of idiocy and imbecility. While congenital syphilitic children presenting the well marked stigmata, may later develop juvenile general paralysis, tabo-paralysis, tabes, primary optic atrophy, epilepsy, chorea, hysteria and meningitis, it is much more common to find apparently healthy children born of syphilitic parents, developing at or about puberty, the various nervous affections mentioned above. These are all Mott's observations—the cases of pure tabes I have seen are well and healthy children, in the great majority of instances, but for their optic atrophy and their loss of certain reflexes. Mentally, they were, with one exception, rather above par, than merely average. They form as stated, a class by themselves, and the number observed shrinks to very small proportions if among the cases reported those showing any indication of the mixed type—the taboparalytic—be excluded. These latter die within three or four years after admission to an asylum, and, in ways only slightly modified from the adult type—delusions of grandeur and those of a sexual character being less marked—end their days in a state of mental and physical dissolution. The life of the pure tabetic type, however, goes on in most ways as before, but for blindness, and while I have not been able to ascertain how many of the cases reported are alive, the fact that only one autopsy is recorded on a pure tabes (that of Malling) shows that these children are resistant. Reports sent to me from the Vienna clinic state that the children observed there are at present as well as two years ago, but for their decreasing vision.

The Wassermann reaction has been reported in a few of the published cases only, the greater majority of them being observed before the year 1908. Since then it has been reported in thirteen cases, being positive in eleven. To these I add the twelve cases reported in this paper, all of which were positive. The high percentage of Wassermann in the blood stands in rather marked contrast to the frequency of the positive Wassermann reaction in adult tabes, where in the blood it is not over 70 per cent. in the advanced cases, in the incipient not over 60 per cent. The optic atrophy, found in 95 per cent. of juvenile tabes, is in striking contrast to the percentage, even the highest (Uhtoff, 40 per cent.) found in adults. Why this atrophy is so constant in the juvenile form we do not know. We do know that optic atrophy is found very much more often in individuals of a broad, short, robust, rather stocky type, as regards the adults. The children, however, whom I have seen, were if anything rather graceful in physique, and of a slender type of bodily development. The patellar and Achilles reflexes are absent in 80 per cent. of juvenile tabes, which corresponds with the figure as regards tabes of the adult. Romberg and ataxia are noted in the tabes of the adult in about 80 per cent. of the cases, just in inverse proportion to juvenile cases, where ataxia is missing in at least 80 per cent. and Romberg is scarcely ever indicated. We know that the form of tabes in adults beginning with optic atrophy usually does not advance to the atactic state, and when it does, we find this state a mild

one. In analogy to this we could expect and we do find in the juvenile tabetic, where the high percentage of optic atrophy is the striking lesion, ataxia in a very small number of the cases. This opposition of optic atrophy and ataxia is perhaps to be sought in the fact, which Oppenheim also emphasizes, that the motor exercise which beginning blindness forces upon these patients can restrain motor instability, just as we know that Fraenkel's method of training ataxia has in many cases led to striking improvement. The absence, or difficulty in eliciting, the patellar and Achilles reflexes we find in nearly all the cases, as well as Argyll-Robertson pupils, anisocoria and inequality of pupils. In a number of the cases reported, and in one of mine, an early and rather persistent enuresis nocturna was complained of.

The prognosis as regards sight is an absolutely unfavorable one. Mercury does not seem to influence the course of the disease, and in some cases has been said to hasten it. We must, I think, see to it, even in the early stages of loss of vision, if Wassermann be positive, and any of the other mentioned signs of tabes are present, these children be taught the ordinary occupations for the blind, such as basket-weaving, broom-making, etc., which they learn with a great deal more facility while some remnant of their eyesight is still left to them. The optic nerve atrophy causes within a year or two, complete blindness, in practically all cases.

The frequent positive Wassermann reaction in one or both of the parents of these children, and the almost uniform positive Wassermann reaction in the children, is enough to stamp this disease as inherited tabes. In the parents we so often find signs of tabes and general paresis (according to Marburg and Mott, in from 18% to 20%) that we can scarcely avoid the conclusion that children born of parents who later develop either of these two diseases are more likely to show a syphilitic inheritance in the form of a juvenile or infantile tabes (or general paralysis or tabo-paralysis) than are those in which the acquired syphilis of the parents does not lead to the development of tabes or general paresis.

A few short and scattered statements on this matter are found in Oppenheim's latest edition, while Church and Peterson's Neurology contains a number of inaccurate statements regarding this condition; the malady does not usually begin with urinary troubles, gastric and intestinal crises are not frequently noted, the stigmata of hereditary syphilis, the presence of gross syphilitic lesions of the brain and cord are conspicuous by their absence—this last in perfect analogy to the tabes of adults, where, as is well known, a tabetic with gross syphilitic lesions is a rarity. The statement that the malady begins *least* frequently with amblyopia is in absolute opposition to the real condition.

This short account of infantile and juvenile tabes I have thought worth while to read in a section on Ophthalmology for the reason, first, that very few indeed of any text-books on the eye mention the subject at all, and these only in a very cursory fashion; second, the observing of

twelve cases of this type in two years, even considering the huge number of cases of all descriptions seen during that time on a large European clinic, may possibly indicate that they are not as rare as supposed; third, they are primarily eye cases in the sense that the ophthalmologist has nearly always the opportunity of seeing the child first, and that the most constant lesion, and as a rule the only one causing real impairment of ability to lead a normal useful life, is one to be diagnosed by the ophthalmologist, optic atrophy.

In concluding I wish to acknowledge my indebtedness to Hofrath Prof. E. Fuchs for permission to report the cases, and to Prof. Marburg for his direction in the neurological examination of them.

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Discussion.

Dr. A. W. Hoisholt, medical superintendent Napa State Hospital, Napa, said: I can only say a few words concerning the subject of Dr. Barkan's paper, as I have not in the course of an experience of twenty-four years seen a single case of juvenile paresis in the State Hospitals of Stockton and Napa. As European reports, according to Barkan, show it to occur in two per cent. of cases of paresis, the experience here may possibly be because such cases have gone to the Home for Feeble-minded at Glen Ellen. I have no knowledge as to this possibility, but can say that whenever inmates of Glen Ellen have shown symptoms of a marked psychotic nature they have usually been sent to Stockton and Napa, and we have now

and then received patients from there at the age of puberty, but none of them have been juvenile tabes.

At one time I collected sixty-nine cases of general paresis including some cases of tabo-paresis. The youngest of these was twenty-six years old. Since then I have seen one case that was twenty-three years of age. Optic atrophy is, as Dr. Barkan says, rather infrequently observed in the adult tabetic as compared with the ninety-five per cent. in juvenile tabes, and especially so in general paresis. I have seen a number of cases of optic atrophy in paresis, but they have usually been of the tabo-paretic type. A noted baseball player came lately into my care, who did not show mental symptoms until a year or more after the optic atrophy was complete.

Dr. Kaspar Pischel, San Francisco, said: The suggestion of the essayist to send these children to a training school for the blind reminds me of the late Dr. Emile Javal, the famous inventor of the ophthalmometer. When over sixty years old he lost his sight through glaucoma. He then wrote a book, "Entre Aveugles," which every oculist should read. Javal advises in cases in which the sight is slowly, but surely diminishing, as in atrophy of the optic nerve, teaching these unfortunates the occupations and reading of books for the blind, early, because the little sight they still have will help them greatly in acquiring this accomplishment.

Also discussed by Dr. Hulen, of San Francisco, Dr. Church, of Venice, and Dr. Jordon, of San Jose.

Dr. Barkan, closing discussion: As regards therapeutic speaker states that there was no treatment of these cases: Salvarsan, as suggested by Dr. Hulen might be worth trying. As regards the application of Mendel's law, the family history cannot be traced back far enough, and in the cases reported before 1908 but little mention is made of the state of health of the parents: the possibility of a specificity of the spirocheta as regards its tendency to produce either tabes or gross tertiary lesions has been recently raised, especially by Erb: the possibility of this seems supported by Spielmeier's experiments, who succeeded in giving to alternate series of dogs tabes in one series, initial syphilis with its lesions in the other series; for a more detailed account of this possibility the speaker would refer to a paper on Tabes and Basedow to be shortly published in the Boston Medical and Surgical Journal.

FEEDING IN THE FIRST MONTH OF LIFE.*

By ADELAIDE BROWN, M. D., San Francisco.

The importance of the human milk supply has received new emphasis from the work done in the past two summers with human milk as an adjunct to difficult infant feeding problems, on the Boston Floating Hospital. A daily milk route has been established for collecting human milk by a trained nurse, and it is used in the most critical cases for part of the feedings with far better result than any modifications of cows' milk have given. This study emphasizes the importance of preserving even a partial supply of human milk for the infant. Supplementary feeding is an easy matter in comparison with complete artificial feeding.

Modification of human milk is required in cer-

tain cases, especially during the first weeks of life in feeble or premature infants. The weaker suction power of such an infant tends to make the supply less and the quality heavier. The same is true of all artificial appliances for emptying the breast. However, a compromise is necessary where a milk too rich in proteids or fats exists; it can be fed diluted after being pumped from the breast. Such milk should be kept on ice, in sterile dishes, and diluted with boiled water to which 5 per cent. of milk sugar has been added, so that the carbohydrates of the food shall not be diminished.

Such modification of human milk I have found necessary and successful in two cases of general eczema occurring at two weeks of age, where the fat of the mother's milk stood at 6 per cent. (Babcock). In one case three feedings a day were given of condensed milk (low in fat and proteid) and one-half ounce of water fed the child before each breast nursing. An ability to digest mother's milk developed after three months, while what looked like a difficult eczema situation subsided in three weeks.

We have done some experimenting in institution and private work on intervals between feedings in the first month of life, and having wandered to the two and one-half, three and even four-hour intervals, have returned to 10 feedings in 24 hours for the first six weeks, reach three-hour feedings by three months, and no feeding from 6 p. m. to 6 a. m. by six months if possible.

One argument for the two-hour feeding is the mechanical stimulus to lactation of the act of suckling. In the first month of life a thorough establishment of this function is necessary, and in many cases failure is due to a disregard of small details. A pessimistic attitude on the part of doctor or nurse often discourages the mother.

Starvation temperature has aroused some skepticism and has been laid at the door of septic infection. It is a condition often overlooked in private work, where routine observation of temperature in the infant is less frequent. The cases that I have seen, and they are fairly frequent, occur on the second and third days, and the temperature disappears on giving the infant 5 per cent. sugar solution one-half to one ounce every two hours. Such babies have always lost in weight more than the average for the time, have dark dry skins, brown stools, and are hard to rouse to nurse. The symptoms disappear rapidly, with the fluids and the establishment of lactation.

Lavage in connection with regurgitation and vomiting in the first weeks of life, I have only used once. Abundance of water with each feeding, and a longer interval between feedings, has corrected the difficulty in nursing infants.

Gavage has been of great value in the feeding of several feeble and premature infants. It is quickly learned by a skilful nurse and is less likely to traumatize the mucous membrane than

* Read before San Francisco County Medical Society.

O.R.	I.	Milk V-10 1032 Fat 2.6	7.6 Wt. day V-4 fat glob. many no increase fat few fatty acids	Wt. day 7.14 V-10 some increase few		
B.	II. (34) Ipara Forceps	Milk V-10 1032 Fat 3.5	V-4 8 lbs. no fat glob. no fat glob. + acetic acid many fatty acid crystals	V-8 no occas. glob. few	8.12½ V-10 no many some	
J.	III. 38 Ipara	Milk 1030 Fat 3.3	V-8 6.6 no fat drop many some fatty acid crystals	6 no many many	6.14 3 wks.	
C.	IV.	V-18 Wt. 8.6 day No Occasional No fatty acids	V-11 wt. day few many fat droplets many	V-27 no some many	wt. day 8.7	
S.	V.	V-27 many 7.10 slight increase many	7.4 few + many many		8 lbs.	
P.	VI.	V-4 occasional slight increase very few fatty acids	V-10 no many many	V-15 no many few	V-16 no many many	
Ca.	VII.	V-15 no some fat droplets many fatty acids	V-16 occasional many some	V-21 occasional no increase many	V-23 occasional many many	
Go.	VIII.	V-15 occasional many fat globules many fatty acids	V-16 many slight incr. many	V-18 no many many	V-21 no many few	V-23 few many many
Ja.	IX.	V-27 occasional many fat droplets many fatty acids				

feeding by a pipette or spoon, and the child is less likely to be chilled in the process.

During my present service at the Alexander Maternity, with the co-operation of the laboratory and the interne on the service, a study of the fat-digesting and fat-assimilating power of nine breast-fed, new-born infants has been made—twenty-five examinations of stools, and three of mother's milk, where the Babcock test for fat content was done. The examinations were made of three fragments of the infant stool: one alone, one stained with Sudan III, one stained with Sudan III and a drop of glacial acetic added and boiled. In the first specimen we get a general idea of the stool; in the second, the fat globules and fatty acids show up clearly, and on addition of the acetic acid and recrystallization on cooling, fatty acids and fat globules are liberated from the soaps formed in digestion.

The conclusions from these tests would show that the new-born infant acquires rapidly the power to split up the fats into soaps and fatty acids, and the amount of the latter and the small amount of increase of free fat show that the digestion of fat is a stronger power in the early weeks of life than its assimilation.

The gain in weight of these infants in the three weeks was one pound average. They were all normal, healthy infants, with no complication save forceps delivery for three.

The non-assimilation of fats is therefore not a pathologic but a normal condition, and the supply of more than can be assimilated is nature's course, if one is justified in a conclusion from so small a group of cases.

CENTRALIZATION OF PUBLIC HEALTH ADMINISTRATION.

Prepared by JOHN NIVISON FORCE, M. D., Assistant Professor of Epidemiology, University of California, in conjunction with a Committee of the City Attorneys' Association of Northern California.

INTRODUCTION.

By B. D. MARX GREENE, Berkeley.

For a number of years, as City Attorney for several small towns in Contra Costa County, I have had unpleasant experiences with the general public health regulations which usually pertain to small communities. Our water has been polluted and unfit for human consumption, and it is doubtful whether any of the milk sold in the towns measures up to the required standards; there is no inspection of meat, and, in one town at least, disease-breeding nuisances abound and cannot be abated. This has all been brought about owing to the lack of proper health regulation enforced by full-time officers.

Again, as City Attorney of Berkeley several years ago, I helped in the preparation of a model milk ordinance under which competent inspectors were appointed. Other cities at or about the same time also adopted similar ordinances and their inspectors covered the same ground outside of the cities in the inspection of dairies which our inspectors covered. There was, therefore, grave duplication of time, salary and expense.

These two illustrations serve to show the chaotic state of our public health administration since

there is in some parts of the state no regulation at all and in other parts of the state too much regulation through duplication.

With a view to remedying the abuses of duplication in our larger cities, a committee of the City Attorneys' Association of Northern California, was appointed to consider the question of uniform legislation by means of ordinances or inspection districts. After many conferences, it was found that the only solution was an entire change in our present state health administration by the centralization of all powers of health control in one body with full-time inspectors and health officials acting directly under this central authority. The annexed report of Dr. Force, who worked in an advisory capacity in conjunction with our committee, expresses our views.

This report I presented to the Health Officers of the State of California assembled in convention at the same time as the League of California Municipalities, at Del Monte, October 12th to 17th, and the general principles enunciated therein were by that association unanimously endorsed with a recommendation for endorsement by the League of California Municipalities. Thereafter, I read the paper to the League in convention assembled and a resolution was unanimously adopted, approving the general principles set out in said paper, and referring the same to the Legislative Committee of the League for presentation to the Legislature of the State of California, with a view to action at the coming session.

B. D. MARX GREENE,
City Attorney of Antioch and Pittsburg.

An efficient public health administration is beyond the financial reach of the small rural or suburban community. Berkeley, for example, conducts a fairly efficient control of its milk supply, yet cannot afford to inspect at the time of slaughter, all cattle intended for the meat supply of its inhabitants. On the other hand, Oakland conducts a meat inspection in Emeryville but has no authority to destroy meat condemned in the course of this inspection. Some of the large dairies supplying milk to the metropolitan district around San Francisco Bay are inspected at least monthly by the Medical Milk Commissions of San Francisco and Alameda Counties. In addition they are visited by the regular milk inspectors of the Bay Cities, to say nothing of the occasional visits of the inspector for the State Dairy Bureau. In contrast to this prodigality of inspection, the small town with no organized milk inspection must depend on three agencies for even a partial survey of its milk conditions. If informed of contagious disease among the cattle the State Veterinarian's office may conduct an investigation. The State Dairy Bureau is attempting to cover the entire state with a very inadequate force of inspectors principally concerned in keeping up certain standards of milk purity and not concerned with either human or animal diseases in relation to milk products. Finally, the local health officer would prob-

ably inspect a dairy for a possible typhoid or diphtheria carrier if these diseases should chance to occur along the milk route supplied from that dairy.

The obvious remedy for these conditions is centralized administrative control similar to that provided by law for water districts. Mere similarity of ordinances and friendly reciprocity between municipalities will not secure the desired result.

An interesting experiment in co-operative public health administration has just been published by E. B. Phelps, Professor of Chemistry in the United States Public Health Service.¹ Professor Phelps entered into a contract to furnish a complete public health administration to a group of towns in the neighborhood of Boston, comprising a combined population of 32,650 scattered over an area of 100 square miles. He also contracted to furnish a complete milk inspection service to an additional population of 30,000. The organization consisted of the health officer, a bacteriologist, a field assistant who collected samples for the bacteriologist, a sanitary inspector and two clerks. The total cost of the above service for one year including salaries, laboratory equipment, office furniture and printing, as well as the cost and upkeep of a small automobile and a motorcycle amounted to \$7,603.51. From an analysis of costs Professor Phelps has determined that the ideal administrative group would be a population of 60,000 which he claims could be served at an expense of twenty-one cents per capita. This would include the above mentioned employees besides the services of two women health visitors and such extra assistants as might be necessary.

The experiment is interesting as a study of efficiency, but the idea of delegating a governmental function to a private organization is distinctly anti-social and cannot be commended. The lesson to be drawn from this experiment is that high grade public health administration is economically possible in a sanitary district which employs a well trained force of workers.

The following plan is suggested for bringing the entire State of California under a centralized form of public health administration without affecting the rights of political subdivisions:

The State Board of Health: The state board should consist of the commissioner of health, a sanitary engineer, a licensed veterinarian and four other persons three of whom should be licensed physicians. The members of the board should be appointed by the governor for a term of four years with due provision to avoid an entire change of the membership at one time.

The Commissioner of Health should be a civil executive officer appointed to such office by the governor. He should give evidence of experience in public health administration. He should serve as president of the state board and as its executive officer. He should devote his entire time to the

¹ Phelps, E. B. Co-operative Public Health Administration. Public Health Reports, vol. 29, No. 39, p. 2477, Sept. 25, 1914.

duties of his office and be expressly forbidden to engage in any other occupation or business.

Powers and Duties of the State Board of Health:

1. The board should have general power of inspection with power to appoint inspectors, directors of bureaus and other employees subject to state civil service regulations.

2. The board should have power to make rules and regulations for the execution of the duties prescribed by law, including regulations for the guidance of local health officers.

3. The collection and publication of vital statistics and other matters of information concerning the public health should be a duty of the state board.

4. The board should maintain a system of laboratories for chemical and bacteriological examinations including the examination of milk.

5. It should be made a duty of the board to exercise control of the sanitation of all places where milk and other food products are produced and sold. This would add to the board the functions of the existing State Dairy Bureau which would be wonderfully strengthened by the change.

6. The board should exercise sanitary control over all public buildings which are the property of the state; over all factories, camps, and tenements.

7. It should be the duty of the board to investigate epidemics of contagious diseases among animals. This would add to the board the functions of the State Veterinarian and assist in the solution of the problems of rabies, squirrel plague and bovine tuberculosis with which the state is confronted.

8. The board should conduct investigations of the infectious and occupational diseases of man and take necessary measures for their prevention and control.

9. The board should have power to investigate water pollution and sewage disposal throughout the state and take necessary measures to prevent injury to the public health by water pollution or the improper disposal of sewage.

It is obvious that many elements of the above powers and duties can only be administered by the board through a sufficient number of employees. It is therefore important to secure for the board the services of full-time local health officers. The present custom of appointing a local physician at a nominal salary, without any definite understanding as to his qualifications or the amount of time to be given to his duties, is unbusinesslike, to say the least. Furthermore, the health officer with a private practice is open to the jealousy of other physicians in the community.

The County Health Officer: The county health officer should be appointed by the supervisors from a list of eligibles certified by the State Civil Service Commission. The requirements for health officer should be indicated by the state board of health to

the civil service commission. County health officers should be deemed state employees and should be compensated in part by the state as is now the custom for judges. The compensation of each county health officer shall be fixed by law depending on the population served. The portion of the compensation not paid by the state shall be apportioned to the one or more counties concerned, on a basis of population. If one health officer is apportioned to several counties, the supervisors of the several counties concerned should meet, for the purpose of appointing a health officer, in joint session. If the supervisors are unable to agree, the state board of health shall make the appointment, or any county is authorized to request the state board to make a suggestion as to the person to be appointed. County health officers shall be full-time employees and shall not be removed from office except for cause. Provision should be made for increased compensation with increase in time of service. Promotion should be consequent on examination.

Deputy County Health Officers. The requirements for deputy county health officers are the same as those of county health officers. While it is possible that a deputy may be assigned to the service of a sanitary district within a large county, or be in full charge of a small county or city, it is probable that deputy county health officers would be assigned to some special duty for a certain area. Thus a deputy county health officer would serve as director of the branch laboratory maintained by the state board of health in a county. Another deputy would be concerned in dairy inspection for the entire county or perhaps be conducting a sanitary inspection of the county schools. While the civil service commission should maintain a separate roster for deputy county health officers, it should be possible for any deputy who has served a sufficient time as such to be admitted to the examination for health officer.

City Health Officer: Any city may surrender its sanitary powers to the county and will then be provided with a deputy county health officer who shall serve as city health officer if the size of the city warrants his full time employment. Otherwise he may be given the city and a portion of the surrounding country in order to make up a population sufficient to form a practical sanitary district. It is obvious that it would be to the best interests of the city to take advantage of the combined state and county aid in the administration of its public health affairs.

Subordinates: Health visitors, assistants, helpers and clerks shall be furnished in such numbers as needed for the proper administration of the sanitary districts. They shall be appointed by the supervisors on recommendation of the county health officer. They shall be compensated entirely by the county.

Summary: The only efficient system of public health administration consists of a strongly centralized health authority operating at the head of a number of sanitary districts in charge of full-time trained employees appointed through civil service regulations.

POINTS OF INTEREST IN THE TECHNIC OF GASTRO-ENTEROSTOMY.*

By PAUL S. CAMPICHE, M. D., F. A. C. S.,
M. R. C. S(Engl), San Francisco.

The present paper is the outcome of a discussion that took place at the April 7th meeting of the San Francisco County Medical Society. To our astonishment, we heard at that time some eminent physicians take a most pessimistic view of the results of gastric surgery. A distinguished specialist went so far as to say that, owing to the very high mortality, which he placed at 33%+, he now advises his patients rather to live with their ulcer troubles than to run the risk of an operation. This is a very serious situation indeed, and we thought it would be appropriate to review the latest advances in the technic and, if possible, have here among the surgeons a complete discussion of the subject of gastro-enterostomy.

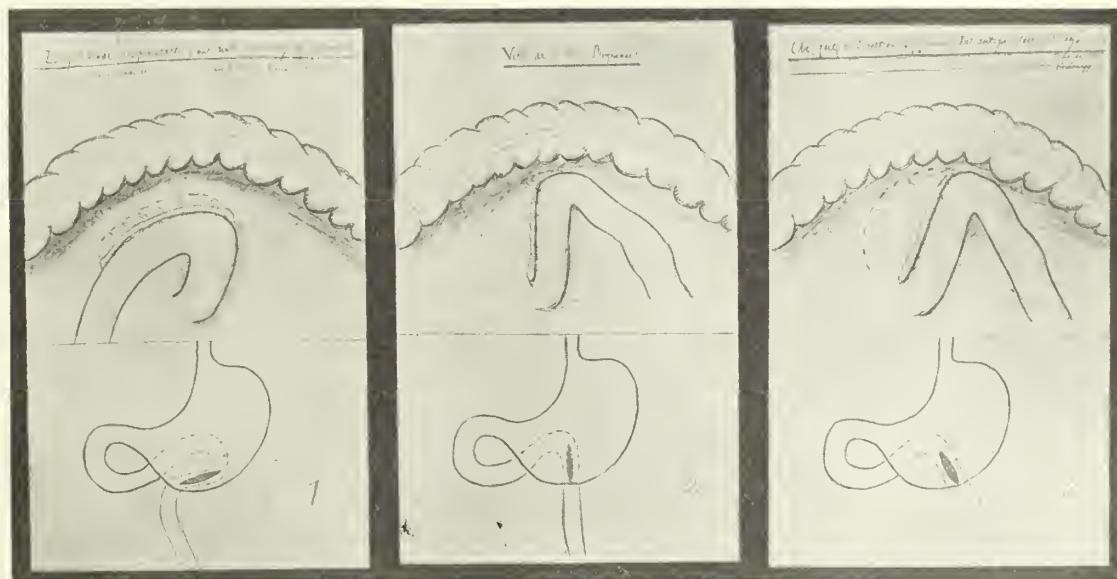
We will begin this paper with a few remarks on the action and the complications of gastro-enterostomy as they are understood in the light of recent experience, and we will close with a rapid description of the most approved technic of the operation.

gastrica or anacidity would be a contra-indication for operation.

The complications of gastro-enterostomy which ought to retain our attention are peritonitis, the vicious circle, and peptic ulcer of the jejunum.

General acute peritonitis is almost unknown after this operation, while chronic adhesive peritonitis seems to be present in many instances. The existence of this condition has been ascertained by surgeons who have had to re-operate some of their patients a few years after the first intervention. The process is not caused by infection but is simply the response of the peritoneum to the mechanical irritation set up by the clamps, sponges, sutures, etc. This condition has often resulted in a constriction of the stoma with a return of the old symptoms, and the lesson to be drawn from this experience is, first, to handle the stomach and jejunum with the utmost care and gentleness; second, in view of the fact that some degree of contraction is unavoidable, always to make the anastomosis as wide as possible.

Vicious circle: This most dreaded complication of gastro-jejunostomy is always due to faulty



- 1—Longitudinal (isoperistaltic), but with reversing of jejunum (near greater curvature). Mayo, Robson, Roux, Kocher.
2—Vertical. (Bier, Moynihan.)
3—Oblique (direction of jejunum), but antiperistaltic (Mayo, Ochsner, Hochenegg, etc.)

The effect of gastro-enterostomy on the stomach has been studied by several observers with the aid of the skiagraph. While some of them (Pers,¹ Bier²) find that the stomach empties itself quicker through the new stoma, whether the pylorus is patent or not, others (Blad,³ Schüller⁴) maintain that the emptying of the stomach is not accelerated and that the bismuth always leaves the stomach both through the stoma and through the pylorus; but all find that a reflux of bile takes place for a long time, and all agree that hyperacidity and spasm are much diminished after the operation. Bourne⁵ finds the best results in cases with an original acidity of 0.2 or 0.3%, while achylia

technic. In this condition the jejunum (especially the efferent limb) becomes kinked at the site of anastomosis; the bile accumulates in the much distended afferent limb and in the stomach and is vomited in large quantities. This complication arises especially in cases where the pylorus is still patent.⁶ Other incriminating causes of this condition are torsion of the jejunum on its longitudinal axis, or its obstruction by a fold of redundant mucosa. All cases are not fatal: Kocher,⁷ and⁸ out of 92 gastro-jejunostomies reports six instances of vicious circle; all cured. Mauclaire⁹ had two bad cases which he saved by keeping them a few days in knee-chest position (analogous to the treatment of acute post-operative dilatation of the stomach). The original von Hacker posterior gastro-

*Read before the San Francisco County Medical Society, May 19, 1914.

jejunostomy, with a loop of jejunum nine to ten inches long, created the most favorable conditions for the development of the vicious circle. Petersen was the first to operate with a short loop, with the button, but it was Ch. Mayo¹⁰ and ¹¹ in 1903 who firmly established the posterior no-loop operation done with sutures as we still perform it today, and this was the greatest advance in the technic of posterior gastro-jejunostomy. Speaking of Mayo's "no-loop modification" we would like to make a personal remark and say that it should not be called the no-loop but the short-loop operation. Mayo himself allows a loop one and one-half to three inches in length as quite safe; and this is very important because some operators, in fear of the vicious circle, sometimes attempt to do the operation without any loop at all, which means that they operate within the abdomen, deeply behind the stomach, in a hole, so to speak, and with the result of bad sutures, leakage, etc. It must not be forgotten that the operation of gastro-jejunostomy (to be clean and safe) must be performed *outside the abdomen*, or at least so that the continuous sutures can be applied quite easily with a straight needle, and the shortest loop of jejunum which will allow this will always be from one and one-half to three inches long.

Anterior gastro-jejunostomy must always be done with a very long loop of 16 to 20 inches, so as to avoid constriction of the transverse colon. The only way to ward off a vicious circle in this case is to make the line of suture at each end one inch longer than the stoma (as first suggested by Hartmann¹²) and to make a long anastomosis.

Other methods devised to drain the bile below the stoma, such as Braun's anastomosis between the two limbs of jejunum, and Roux's Y-shaped gastro-enterostomy, have become unnecessary since we have learned to do simple gastro-jejunostomy in a way to avoid vicious circle. Besides this, they are dangerous as favoring peptic ulcers, and I want to say here that my former chief, Professor Roux, has now abandoned the Y-shaped operation which he was the first to perform in 1898 and which still bears his name.¹³

Peptic Ulcer: This remote and rare, but none the less disagreeable sequel of gastro-jejunostomy, has been known for about 15 years. It has occurred after both posterior and anterior gastro-jejunostomy, but more often after the latter; its frequency is from 2% to 3%; it appears more frequently in men and generally in patients that have not kept to a proper diet after the operation. Kocher,* out of 92 gastro-jejunostomies, reports three cases of peptic ulcer, all cured by resection of the ulcer and new anastomosis. The symptoms of this condition differ widely: some cases are quite latent; or perforation and acute peritonitis develop suddenly; symptoms of a recurrent ulcer (hunger-pain, occult blood, etc.) are present in some instances, with tenderness over the site of anastomosis or with formation of a hard swelling against the abdominal wall caused by a local peritonitis; the ulcer may perforate into the colon and cause a gastro-colic fistula. (Those interested in this condition are referred to the articles of Gosset¹⁴ and

W. Mayo¹⁵ on the subject.) The ulcer may be at the line of anastomosis, especially in case of faulty technic, or in the jejunum proper when acid is abnormally present in the intestine and is not neutralized by bile. Animal experiments have shown that with good suturing of the mucosa, the anastomosis heals by first intention in seven to eight days. Any factor interfering with good healing may lead to an ulceration of the line of anastomosis. Such are an impacted Murphy's button, retention of unabsorbable material (silk), infected hematoma, sepsis, and too small anastomosis resulting in imperfect drainage of the stomach, etc. Then all factors tending to increase the acidity in the jejunum and lessen the protective influence of bile, such as Braun's anastomosis, Roux's Y-operation, faulty diet, etc. In order to prevent this complication we must make exclusively the operation of simple gastro-jejunostomy with a large opening, suture the mucosa carefully (whether with catgut instead of silk we shall know in a year or two), avoid the use of Murphy's button, keep our patients on a diet for a very long time and give them plenty of bicarbonate of soda after the operation if necessary.

Murphy's Button: Murphy's button¹⁶ is still used by a few men; among them we find Carle Kümmell, Steinthal, de Beule,¹⁷ Gelpke¹⁸ and the Heidelberg Clinic¹⁹; but the majority of surgeons prefer a good suture. While it allows a very rapid operation, the button has been responsible for many accidents, such as hemorrhage, perforation, obstruction, escape of the button into the stomach, and above all, late constriction of the anastomosis with recurrence of the symptoms. Some experiments tend to show that in cases operated with Murphy's button, the mucous coats of the stomach and jejunum often fail to unite, and the line of anastomosis, according to Bier,¹⁶ is often made up solely of scar tissue, which would be much more subject to contraction. But the main objection to the use of the button is that the anastomosis cannot be made as large as we now think it always should be in gastro-jejunostomy. At the last International Surgical Congress, which took place in New York in April, 1914, Murphy²⁰ stated that he has discarded the round button and is now using an oblong button.

To sum up: we would say that Murphy's button rendered great service at a time when suturing was slow and defective, and weak patients had to be kept under deep anesthesia for a long time; but it has become unnecessary since the introduction of clamps which make the operation safe and easy to do under such a slight anesthesia that even the weakest patients can stand it. We would use a button only when at the start an emergency (collapse or syncope) should arise that would make the rapid termination of the operation imperative, or when doing gastro-jejunostomy in a case of perforated gastric or duodenal ulcer.

Technic: Most surgeons now prefer posterior gastro-enterostomy as giving better results (von Hacker, Petersen, Czerny, the Mayos,* Bourne,* Burk,²¹ Moynihan,²² Kocher,* Roux,* Scudder²³), but the technic of the operation varies somewhat

in the details. In his Clinics, J. B. Murphy²⁴ tells us that while in Europe last year he saw many surgeons perform gastro-enterostomy and that no two men did it in the same way, but that they all had good results.

Everybody now does the short-loop operation. As to the direction of the line of anastomosis, we find the surgeons divided in three groups. Some, including Mayo-Robson,²⁵ Roux,* Kocher,* make it longitudinal or isoperistaltic; others vertical (Moynihan,²² Bier*); and others oblique from right to left above down, which is antiperistaltic (the Mayos,* Ochsner,²⁶ Hochenegg,²⁷ etc.). But as each of these three groups of surgeons can surely produce statistics of 1000 cases with excellent results, we are forced to conclude that the direction of the line of anastomosis is not of vital importance. Mayo* says that his antiperistaltic operation prevents the reversing of the jejunum and keeps the intestine in its normal direction; and we are inclined to follow him on this point as it seems anatomically well founded.

Regarding the number of sutures, Moynihan* uses two rows of silk stitches; and Bier* only one row of Lembert (silk) stitches in posterior gastro-enterostomy, and though he says he never had an accident, we would not dare to follow his example. With Mayo,* and Roux* and others, we hold that the third row (the muco-mucous suture) is necessary to insure hemostasis and rapid healing of the mucosa. Whether this muco-mucous suture could be done with catgut in ulcer cases, the near future will probably show; but it has been proved that catgut is not safe in cancer cases.

All agree that if a meso-colic band from Treitz's ligament extends down the jejunum, it must be trimmed backward as otherwise it may conceal a long loop of intestine. All recommend a large stoma three to four fingers in width (Kocher says six cm.). Clamps are in general use (since recommended by Moynihan), and lately three-blade clamps have been very popular. We prefer the light Linnartz three-blade clamp (which has elastic branches and is used without rubber covering), to the heavy instruments of Roosevelt, Lane and others. Kocher²⁸ objects to clamps on the ground that he has seen hemorrhages after using them. We think that we can control bleeding by an exact muco-mucous stitch and would not forego the great technical aid of the clamps, unless we should have a very reliable assistant.

Technic of Posterior Retrocolic Gastro-Jejunos-tomy: In the description of the technic, I follow the teachings of my former chief, Professor Roux,* and also the writings of the Mayos,* Moynihan,* Paterson,²⁹ Kocher* and others.

The abdominal wall is opened in the epigastrium by a longitudinal or a transverse incision. The transverse incision is preferable because it heals better and causes less pain to the patient after the operation. As the normal tension of the abdominal wall tends to approximate the edges of the transverse incision, a continuous catgut stitch placed on the posterior sheath of the recti, and another on the anterior sheath, is all that is needed to insure

good union if we take care, when closing the abdomen and for the first week after the operation, to keep the patient with his shoulders somewhat raised. (This incision will also be sufficient for pylorotomy, if it should be necessary.) The abdomen is carefully explored (even if this should take five or ten minutes) until some organic lesion has been found. As soon as the diagnosis is confirmed, the stomach, transverse colon and omentum are withdrawn from the abdomen, turned upward, and covered with warm pads dipped in saline solution. The surgeon now opens the transverse mesocolon with Mayo's scissors in a bloodless space, taking great care—especially in fat subjects—to avoid all branches of the arteria and vena colica media. From above the surgeon pushes the stomach through the opening until the greater curvature and a surface of four to five inches of the posterior wall of the stomach (near the pyloric antrum) can be seen. The origin of the jejunum is now sought and is freed from the mesocolic band if one is present, and a long and narrow gauze pad is placed between stomach and jejunum. A point is now chosen on the convexity of the jejunum, about one and one-half to three inches from its origin (this constitutes Mayo's short loop) and united by a single silk stitch to a point of the posterior stomach wall somewhat away from or above the greater curvature. Three inches below this first stitch, on the distal part of the jejunum, another point is chosen and united by a single stitch to a point of the stomach quite near the greater curvature, three inches apart from the other stomach point chosen. These two silk stitches, which have been left long to be used as traction sutures, are now made tense, and in the space between them the stomach and jejunum are united by a continuous silk suture (the posterior sero-serous suture), taking care to run it in a straight line on the convexity of the jejunum, equally far from its mesenteric border all along. By this first sero-serous suture we give to the anastomosis the exact length and direction we wish it to have. *Now and not before* (as seen in all text books) is the time to apply the clamp. There are three good reasons for this technic:

The first is that as a rule hemostatic appliances, like Esmarch's bandage or intestinal clamps, must shut off the circulation for the shortest time possible.

Second: As no hemorrhage or leakage takes place during the first sero-serous row of suture, the clamp is not necessary for this stage of the operation.

Third: The first sero-serous row of suture, when completed, acts as a guide and greatly facilitates the proper placing of the clamp, the middle blade going naturally under it.

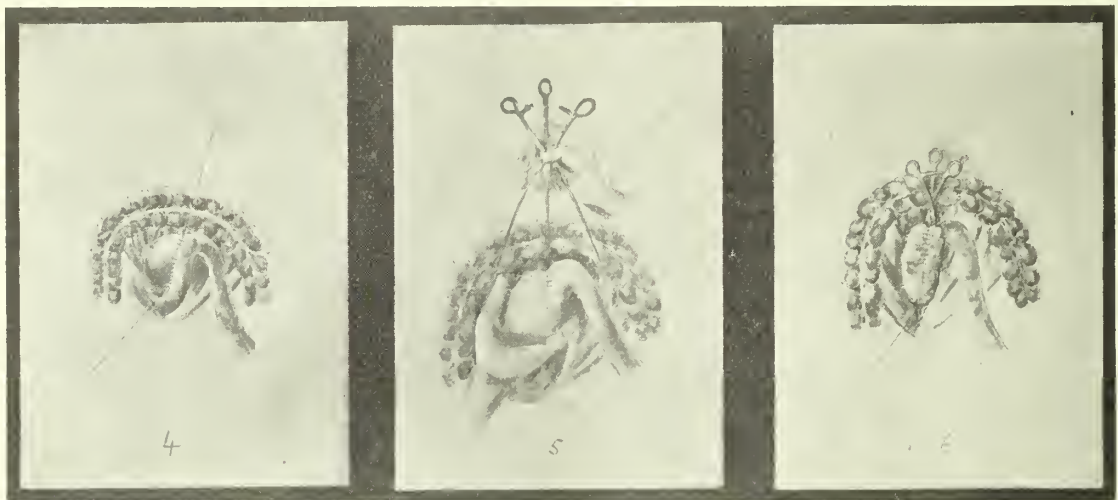
The operator with his left hand seizes the stomach and jejunum along the line of anastomosis and lifts them gently. Holding in his right hand the open Linnartz clamp, he passes the middle blade under the suture; with his left hand he rolls the stomach and jejunum in, slightly against each other, so as to be sure to have the thickness of all three coats in the clamp and plenty of material for

the three rows of sutures; and he closes the lateral blades gently but firmly on the stomach and intestine, seeing that the clamps embrace a fold of stomach and intestine of three and one-half to four inches in length. The transverse colon, omentum, etc., are now returned to the abdomen. The clamp is given a more horizontal direction on the abdominal wall, and is surrounded on all sides by gauze pads, protecting the abdominal cavity. The rest of the operation can now be completed safely and with much ease under a very light anesthesia.

The operator, pressing gently on the stomach and jejunum in turn so as to flatten their surfaces, makes on both of them, respectively, a longitudinal incision of two and one-half inches in length, dividing the sero-muscular coat five mm. away from the first sero-serous sutures on each side. The posterior part of the sero-muscular suture is now sewn with continuous silk and a straight needle. (Some sur-

We now place the anterior sero-muscular suture (with a continuous silk stitch), completely burying the mucosa. The pads surrounding the anastomosis and the clamp are now removed; the gloves are rinsed in sterile water, clean pads are put around and beneath the anastomosis, and the anterior continuous sero-serous suture of fine catgut is applied. The three rows of sutures must be run near each other so as not to narrow the lumen of the intestine, remembering also that the first row (sero-serous) overlaps the second (sero-muscular), and the second overlaps the third, or muco-mucous.

All pads are now removed. The edges of the opening in the transverse mesocolon are fixed, not to the jejunum but to the stomach, three-quarters of an inch away from the line of anastomosis by four or five interrupted catgut stitches so as to prevent the formation of a hernia into the bursa omentalis. The anastomosis is tested from above;



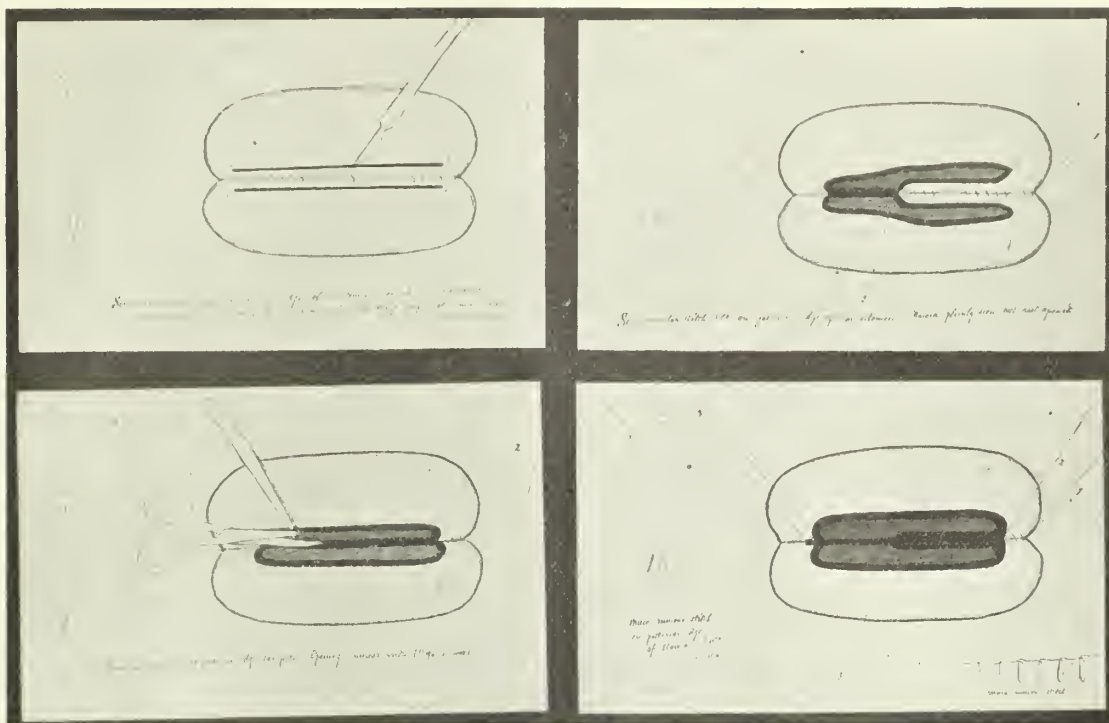
geons use a curved needle; we prefer the ordinary straight needle, as it allows us to sew very much quicker.) While the assistant holds some loose gauze near the incisions, the operator now seizes with a small toothless anatomical forceps the still unopened mucosa of the stomach and opens it with Mayo's scissors along its outer margin on the whole length; then he does the same on the intestine, the assistant catching the contents quickly. The opening in the mucosa must have exactly the same length on the stomach and on the intestine, but no excision of mucous membrane is necessary. After swabbing the interior of the muscae with dry sponges, the surgeon unites the mucosa of the stomach and intestine in a very exact manner, first on the posterior, then on the anterior edge of the anastomosis, with a continuous silk or catgut suture done as a buttonhole suture—that is to say, passing the thread in the loop at every stitch so that there will be no danger of the opening becoming contracted when we pull the last stitch to tie the knot. (For the other coats it is sufficient to pass the thread in the loop only every three or four stitches.)

Between each row of sutures, and especially after closing the mucosa, the surgeon and assistants rinse their gloves in sterile water.

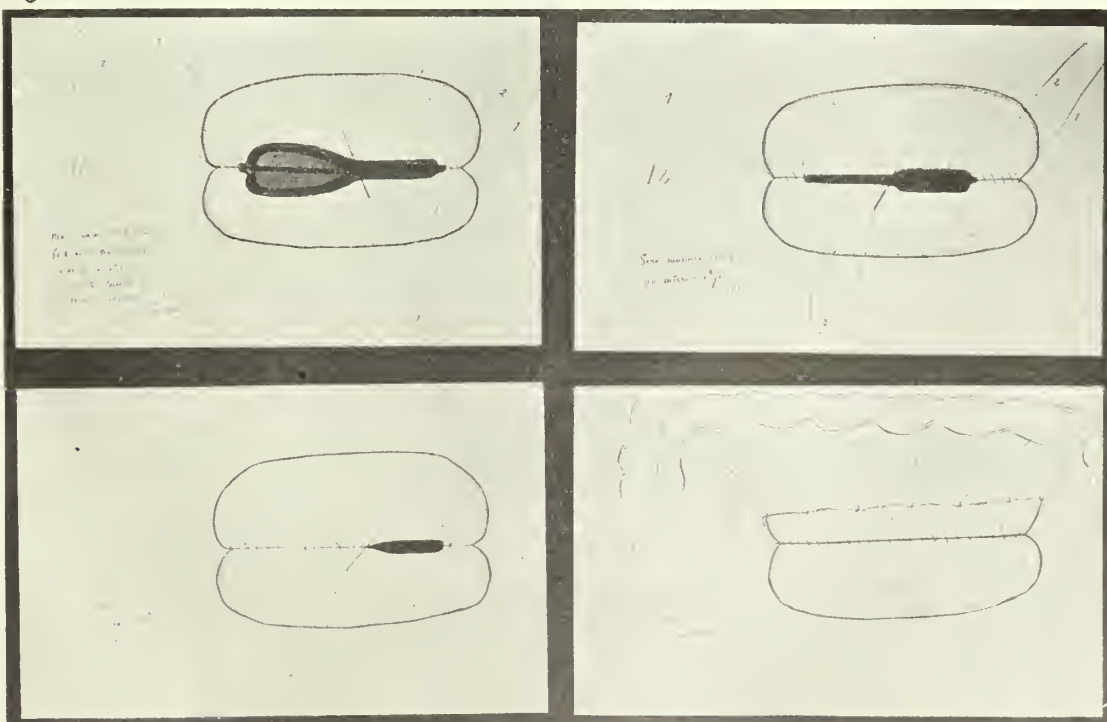
its width should be from three to four fingers. If small gauze sponges have been put in the stomach or intestine during the operation to absorb the secretions, they must be pushed down the jejunum now, as otherwise they might cause distress until vomited. The abdominal wall is closed as indicated above.

Anterior Gastro-Enterostomy, or Woelfler's Operation is preferred to the posterior in all cases by a few like Woelfler, H. Paterson, Kümmell. However, the majority of surgeons will do it only when von Hacker's method is impossible on account of adhesions on the posterior wall of the stomach, or in fat people when the posterior operation cannot be done outside of the abdomen unless a long loop of jejunum is left above the anastomosis.

Paterson* and Kocher,* comparing the two methods, say that there is more vomiting and a longer convalescence after the anterior operation, but the remote results are better: there are fewer adhesions, and in case of subsequent trouble it is very easy to re-operate; the technic is also much more simple. Peptic ulcer and vicious circle are slightly more frequent after the anterior than after the posterior operation; but apart from that, we can say that anterior gastro-jejuno-stomy is a very



- 7—Sero-serous suture (silk) on posterior edge of anastomosis complete. Incision of sero-muscular coat along lines a-b and 31-b1, with sharp knife (at 5 mm. from sero-serous suture).
- 8—Sero-muscular stitch (silk) on posterior edge of anastomosis. Mucosa plainly seen, but not opened.
- 9—Sero-muscular stitch on posterior edge complete. Opening mucosa with Mayo's scissors.
- 10—Muco-mucous stitch on posterior edge of stoma. (Silk or catgut.) Muco-mucous stitch.



- 11—Muco-mucous stitch coming back on anterior edge so as to completely close the lumen of stomach and intestine. (Silk or catgut.)
- 12—Sero-muscular stitch on anterior edge (silk).
- 13—Anterior sero-serous stitch (catgut).
- 14—Transverse mesocolon stitched to stomach three-fourths inch from anastomosis (interrupted catgut).

good operation, which can be done confidently when indicated.

The technic is very much like that of the posterior operation, except that the loop of jejunum must be very long (16 to 20 inches=50 cm.), the stoma must be long too ($2\frac{1}{2}$ to 3 inches), with a longitudinal direction, at the lowest part of the greater curvature near the pyloric antrum, and the suture of the stomach and intestine must be one-half inch longer than the stoma at each end.

As to Roux's Y-shaped gastro-jejunostomy, Braun's anastomosis, and all operations with sutures running across the long axis of the jejunum, we do not do them any more in ordinary cases.

Kocher's gastro-duodenostomy and Finney's operation are very useful in some instances, but they have few indications.

A recurrence of the symptoms of ulcer after gastro-enterostomy takes place in the following proportion, according to different authors: Kocher,* 8%; Bush,³⁰ 10%; Burk,* 20%.

Moynihan reports 70% of his cases as totally cured, and Kocher* 92%.

The mortality of gastro-enterostomy, according to the publications of different surgeons, is: Mayo* 2.4%, Kocher 1%, Bush 2 to 3%, Herbert Pater-son 3%, Burk 3.3%, Moynihan 1 to 2%, v. Haberer³¹ 6 to 10%. (I have done 16 cases with one death, 6%.)

Conclusion: The technic of gastro-enterostomy has been so perfected in recent years that the mortality from this operation should not exceed 3% at the present time.

Discussion.

Dr. Dudley Tait: In listening to Dr. Campiche my thoughts reverted to Lausanne, the beautiful town in Switzerland known to all surgeons as the home of Roux, the most brilliant pupil of the world's greatest living surgeon, Kocher. To have served a half decade as first assistant to a European master is a privilege given to few and must cause envy in many. Whenever, of late, I listen to discussions on surgery of the stomach or intestine, I cannot help protesting against what I believe to be a heresy, and that is the traditional mechanical conception of the gastro-intestinal tract. The sooner surgeons divorce themselves from that mechanical conception, the sooner they go from the anatomical to the physiological side of the question, and the sooner they remember that in dealing with the stomach they are dealing with a contractile organ, the clearer the operative indications will become and the better the final results. The average surgeon, in considering an operation, is satisfied with the mechanical viewpoint. He generally forgets the more important, the physiological side, especially when the gastro-intestinal tract is concerned. The word "drainage" typifies this condition of mind among surgeons, and it is doubtful if our books contain a term which has given rise to as many errors in judgment as has this unfortunate term—drainage. If we substitute for it the term peristalsis and remember that the gastro-intestinal tract is a chemical and physiological laboratory, we shall prepare the field for rational surgery and do away with uncalled for plumbing.

The operation of gastro-enterostomy is such an old and well-regulated operation that there is not very much to be said regarding its technic. However, there are a few points which one may be permitted to dwell upon. The advice given by Dr. Campiche to operate outside the abdomen is very

sound, but I am sure he will admit that in many cases this is absolutely impossible, especially in the class of adherent malignant cases. In these cases, I think he will agree that a button may be of great service; likewise anterior gastro-enterostomy which, as he says, is a very good operation under certain conditions. The direction of the gastric incision has been accentuated by many authors. Experimentally, it has been shown that no matter what the direction of the incision be, the resulting stoma tends to become oval, if not circular. The muco-mucous stitch is not only hemostatic but constrictive and always causes a certain loss of tissue, thereby widening the stoma. Hence the futility of excision of the mucosa. The use of clamps is the all-important part of the technic of gastro-enterostomy; and, in my opinion, clamps are responsible for a great part of our trouble. The mode of applying the clamps was carefully gone over by Dr. Campiche, and this constitutes the most valuable part of his paper. Most surgeons apply the clamps too early in the operation and remove them too late; they should be removed after having completed the muco-mucous stitch. We should remember, in using clamps, that the longer we leave them in place, or the more forcibly these clamps are applied, the more and the longer peristalsis is inhibited. This has been shown many times experimentally. Undoubtedly, in poorly resisting tissues, malignant cases for instance, clamps must cause considerable damage. It seems to me that if our operative results differ in benign and malignant cases, it is partly on account of the unnecessary traumatism which we inflict with clamps. On the other hand, I have seen trouble directly traceable to failure to use clamps. I recall one case of an enormously dilated malignant stomach in which the interne reported having washed out the stomach repeatedly and successfully. At operation no clamps were used. Upon opening the stomach, at least a pint of putrid fluid escaped, soiling the field of operation and eventually causing the patient's death. From this case I learned the lesson to place the patient in a slightly inclined plane whenever gastro-enterostomy is to be performed without the use of clamps. In the matter of new operations, or departures from the typically classic operation, Dr. Campiche referred to gastro-duodenostomy as Kocher's operation. Having been guilty of writing an article on this subject for the State Society nine years ago, I would like to quarrel with Dr. Campiche on the question of priority: the operation in question was originated by Villard, of Lyons. Kocher has done so many great things that he can well afford to relinquish this rather unimportant contribution. Roux's Y-shaped gastro-enterostomy, a specimen of which I had the honor of presenting to this Society in 1900, is a good operation anatomically, but physiologically a poor one. Hence its well-merited fate. Monprofit, the French champion of Roux's anastomosis, reported several hundred cases and then abandoned its use completely. Several years ago, while in Europe, I saw two remarkable instances of late, ill results from the Roux operation. In both cases, upon re-operation, it was found that the gastric loop of the anastomosis had completely separated from the stomach. Peptic ulcer was the probable cause in both cases.

Dr. Campiche alluded to the mortality. I think we should make a distinction between the mortality in benign and in malignant cases. No one can claim less than 15% in malignant cases, whereas in benign lesions the operation is comparatively a harmless one. Parenthetically, it may be stated that in San Francisco and along this coast, the mortality in gastro-enterostomy has increased during the past 12 years. The reason is probably as follows: Ten or fifteen years ago the sole indication for gastro-enterostomy was pyloric stenosis; to-day the field of indications for operation has been greatly enlarged, but many surgeons are offer-

ing gastro-enterostomy as a cure-all. Operators do not seem to have kept pace with physicians. Whether the recent increase in short cuts to surgery has anything to do with this condition, I am not prepared to say.

The question of pyloric exclusion is inseparable from any discussion of gastro-enterostomy. We should not lose sight of the fact that when juxtapyloric ulcers are unrelieved by gastro-enterostomy, considerable benefit may follow a subsequent exclusion of the pylorus. I have seen this in one personal case and in the practice of several continental surgeons. The only positive method of excluding the pylorus is von Eiselsberg's method. All the other methods—Lambotte's sub-mucous purse-string, Berg's slightly modified purse-string, Wilm's fascia method, Brewer's metal band—are miserable failures. The recent Bartlett transgastric method is under trial. Unfortunately, von Eiselsberg's is an operation of no inconsiderable magnitude. Utilizing the sub-mucous resection method, which I made known four years ago before this Society, and adopting a suggestion from Biondi, I have worked out experimentally at the University of California Surgical Research Laboratory, the following plan for excluding the pylorus. A longitudinal incision of three to four cm. is made just beyond the pylorus down to the sub-mucous layer. By blunt dissection, the mucous canal is entirely separated from the surrounding sero-muscular layers. An angiotribe or crusher is then applied to the unopened mucosa over an area of 1 cm., reducing it to a ribbon, each end of which is ligated with fine silk. A few Lembert stitches complete the operation, which is bloodless, aseptic and radical, as demonstrated experimentally.

Dr. J. H. Barbat: I simply want to say a word in defense of the Murphy button. As a matter of actual fact, in the cases in which the Murphy button has not succeeded, in which bad results have followed its use, it has been due to faulty technic. If you do not put the button in properly, and if you do not have a good button, you will not have good results—you will have leakage and hemorrhage. I remember two cases in which the surgeon had to take the button out because he had left the ends of his silk ligature projecting between the edges of the button. That was not the fault of the button; it was the fault of the surgeon. I must say I do not use the Murphy button at present in my gastro-enterostomies. Dr. Murphy himself is using an oblong button. I use the short loop operation and am perfectly satisfied with it.

As far as making three layers of sutures is concerned, I do not consider it necessary. I make two, and I cannot see any reason why I should make three. I have had good results and no hemorrhages. I think accuracy in placing the sutures will eliminate the possibility, or at least the probability of hemorrhage, without the use of the third layer of stitches. In sewing through the mucosa if you pull your stitches at all tight, you are going to cut through. In fact, I believe that in sewing through any of the viscera, of the intestines or the stomach, if you pull your sutures tight enough, you cut through your mucous membrane and through your muscularis-mucosa and muscularis, leaving nothing but the fibrous coat and peritoneum.

If you pull a little too hard, you may cut through the blood vessels. As I demonstrated in my work on intestinal anastomosis, the edges of the button should be pressed sufficiently hard to squeeze out completely the mucosa, the muscularis and the muscularis mucosa, so that there would be nothing left in the bight of the button but the peritoneum and fibrous coat. I think the same should obtain in the placing of sutures, which should be pulled just tight enough to accomplish the same purpose. I think you will find that men who have had hemorrhages or bad results have pulled the sutures too tight or left them too loose. The degeneration of the intestine following these

operations will be more rapid if the tissues are squeezed out in this manner, the peritoneum, of course, adhering first, then the fibrous coat, and the mucous coat last. The muscular coats invariably have a layer of rear tissue intervening, the muscle fibers never crossing. We have had the mucous coat pushed away in introducing the button, and after four or six weeks, would find that the mucous membrane had grown over the line of anastomosis. However, I do not believe that new mucous membrane develops at the site of an anastomosis, but that the cut edges are merely approximated, by the contraction of the muscular coat.

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DOES A RELATIONSHIP EXIST BETWEEN TUBERCULOSIS OF THE EPIDIDYMIS AND TUBERCULOSIS OF THE KIDNEY?*

By R. L. RIGDON, M. D., San Francisco.

So far as the urinary organs are concerned it is certain that the primary point of tubercular infection is the kidney. Opinions still differ widely, however, as to the point of primary attack in the genital apparatus, some maintaining that the prostate is the guilty party, and some that the epididymis should bear the opprobrium. All have been of the opinion that the involvement of one system has no relation to involvement of the other, except that of accident or contiguity. I wish to examine this question a little more closely by inquiring if the lighting up of tuberculosis in one has not a distinct relationship to a similar infection in the other.

In a study of 112 cases of tubercular epididymitis Barney found four only in which the kidney was involved. In another report he states that in 99 patients with epididymal tuberculosis 54% showed prostatic involvement in the first year and that 35% showed vesical symptoms. Keyes, in a report of 100 cases of tuberculosis of the epididymis states that 11 gave evidence of previous kidney involvement. In nine cases the extension took place from the testicle to the kidney. Three of these were in patients who had developed generalized tuberculosis. Cholzoff, in 74 cases of genital tuberculosis found five cases of kidney tuberculosis.

Dr. Isaacs says, "Cases are also noted where simultaneous infection of the kidney and of the testicle occurs and yet the communicating organs about the base of the bladder are not involved. Here we must assume that both infections are derived independently from the same source—the bacilli in the general circulation."

Brasch in 203 cases of renal tuberculosis reported from the Mayo Clinic found 60% with evidence of genital tuberculosis, the epididymis being most often involved.

In a somewhat careful review of a rather extensive German literature upon genital tuberculosis which was undertaken for me by Dr. Howard Somers, only occasional references were found to the subject under discussion and isolated cases only of extension from epididymis to kidney or vice versa were reported. A similar review of the general literature by the Nelson Research Bureau showed that but little had been written bearing directly upon the question.

The symptom complex of early kidney tuberculosis is, first, frequent urination; second, painful urination; third, pyuria; fourth, hematuria. It is noteworthy that all of these symptoms would suggest vesical, rather than renal, involvement, and it is only by careful investigation of a given case that the true site of infection can be determined. It is also probably true that these vesical symptoms are in reality rather late signs of renal disease, and that for a very considerable period the kidney has been infected, but has given no objective sign of its injury. We must recognize as a clinical fact that

the kidney may be tubercular for a greater or less length of time without giving rise to symptoms. Lesions wholly confined to the cortex are probably often symptomless.

Following epididymal tuberculosis Barney states that 35% of his cases complained of vesical symptoms; that is, presumably, pyuria, hematuria, painful or frequent urination. He further states that in 104 urine examinations 43% were found to contain pus, blood and albumen. Of ten pig inoculations, eight gave positive findings.

This and similar evidence is considered by him and others to be clinical proof of the extension of the infection from the epididymis to the prostate and bladder, and the absence of symptoms directly referable to the kidney is taken as sufficient evidence that the kidney is not involved. Undoubtedly these conclusions are correct in many instances, but when we consider that this identical group of symptoms, in the absence of epididymal involvement, points almost certainly to the kidney as the primary source of the infection, may it not be true that in a not inconsiderable number of epididymal cases the symptoms are indicative of a renal, rather than, or in addition to, an epididymal starting point. In the presence of such a group of symptoms not associated with epididymitis we would not consider our investigation of the case complete until we had cystoscoped the patient and collected the urine from each kidney and made appropriate examinations of each sample. Only after such a thorough examination of the upper urinary tract would we consider that we had done full justice to our patient. Likewise it seems to me we should make such examinations in our tubercular epididymal cases. This had not occurred to me as necessary or desirable until quite recently. In fact, my mind was first turned in this direction by reading the article by Brasch, already referred to, but it was not until some time later that I sought to investigate the question.

In this connection I wish to report two cases:

No. 300—Age 30. General health has always been good. Has never been rugged, but on the other hand has not been sick. Has had no urinary disturbance until the onset of the present trouble. Contracted gonorrhea in September, 1912, and consulted me eight days later. He was placed upon the usual treatment for a time, but the discharge would not cease, and the Neisser diplococci could not be made to disappear. Since that time I have run the gamut of all the injections, and various lines of treatment I could think of, including vaccine therapy, but have never been able to stop the discharge entirely or to eradicate the gonococci. When he first consulted me, I noted in the course of the examination that both glasses of urine were cloudy, which struck me at the time as being rather peculiar, since his discharge had been present but four days, a time rather too short for extension back along the urethra. His urine still remains somewhat cloudy.

On December 7, 1912, he reported that his left epididymis was tender. Examination showed a slight beginning epididymitis, localized in the globus minor. This gradually increased in size and intensity of symptoms and then subsided, leaving a somewhat nodular condition of the epididymis.

In April, 1913, the right epididymis began to show signs of inflammation. This gradually became more intense and suppuration ensued and the

*Read before the San Francisco County Medical Society, Dec. 30, 1913.

abscess was evacuated in July following. Guinea pig inoculation with bladder urine was done in June, 1913, and the report after five weeks was positive for tuberculosis. Early in the course of his urethritis he reported a slight tinge of blood in his urine, but this passed away in a few days and I attributed it to the intensity of his urethral inflammation. No systematic examination of the urine was made, but at the time the pig inoculation was done it was noted that considerable microscopic blood was present. In November he reported a marked hematuria. After several days he came to the office and I cystoscoped him. At this time the urine was again free of blood and I could not learn by inspection the source of the bleeding. The general mucosa was normal. Both ureteral orifices appeared normal. The right ureter was catheterized and a sample secured for examination. The left ureter could not be entered.

Guinea pigs were injected with the mixed and right urine. In due time these pigs were killed and the report showed:

Pig injected with right urine, general tuberculosis.

Pig injected with mixed urine, general tuberculosis.

As no urine was obtained from the left kidney, it yet remains to be determined whether that organ is tubercular or not.

There have never been any symptoms other than the urinary symptoms to point to disease of the kidney, and most of the urinary symptoms could be readily accounted for by the urethritis and the epididymitis, so that the kidney lesion might have been overlooked for a longer time than was the case. If the true condition of the kidney had not been discovered when it was, but the examination had been delayed until such time as definite localizing kidney symptoms had manifested themselves, this case would undoubtedly have been classed as a primary tuberculosis of the genital tract with later involvement of the kidney. In all probability, however, the kidney was already infected when he contracted his gonorrhea. This would account for his cloudy urine and the hematuria already referred to.

Case 2725—Came to Stanford Clinic, September 6, 1913. Age 32; fisherman. Family history negative. Personal history: General health has always been excellent. Has never had any venereal disease.

Three months ago took ordinary "cold." In a few days his right scrotum began to enlarge and was painful; not sufficiently so, however, to prevent him from following his trade of fisherman. In about a month he consulted a doctor, who operated upon his testicle. The exact nature of the operation is not known, but probably an abscess was evacuated. Following the operation the pain and swelling subsided, but a fistula remained. It was for this fistula that he came for advice and treatment.

His general appearance was that of a man in robust health. He had lost no weight and had had no back pains or bladder symptoms. Physical examination showed lungs and heart normal. Abdominal palpation gave negative results. Neither kidney could be felt and no tenderness upon pressure was elicited. Left testicle and epididymis and cord normal. Right scrotum was enlarged and somewhat tender. The enlargement was due to an epididymitis and an accompanying hydrocele. The cord was normal. Prostate and vesicles were normal to the touch.

A diagnosis of tubercular epididymitis was made and an epididymectomy was performed on September 10, 1913. The pathological report on the removed tissue showed tuberculosis of the epididymis. He made a satisfactory operative recovery. On October 1 he was cystoscoped. The notes made at the time state that the trigone, the general bladder mucosa and the ureteral orifices were normal. Both ureters were catheterized and samples of urine obtained for examination. Guinea pigs

were inoculated with mixed, right and left urine. On November 4 the pigs were killed and the report showed:

No. 1—Left urine, no lesion.

No. 2—Right urine, general tuberculosis.

No. 3—Mixed urine, general tuberculosis.

A phenolsulphonephthalein test was made which showed: Total excretion from the right kidney in 2 hours was 30%. Total excretion from left in 2 hours was 42%. An examination of the mixed urine made at the time of the patient's entry into the hospital showed a small amount of albumen and a few granular casts, also leukocytes and blood corpuscles.

There was nothing in the history of this patient that would point to a kidney lesion. The obvious thing was a tuberculosis which was apparently primary in the right epididymis. A more careful examination shows that he has a tuberculosis of the right kidney which in all probability antedated the epididymal infection.

In conclusion, it would seem to me very desirable that a more thorough examination be made of the upper urinary tract of patients with tuberculosis of the epididymis or prostate. I should not be at all surprised to find after a sufficient number of examinations have been made that there does exist a direct relationship between tuberculosis of the kidney and tuberculosis of the epididymis.

This question is not alone of scientific interest, but it is also of practical importance. It may well be that closer examinations may show that in a considerable number of patients requiring an epididymectomy for tuberculosis a nephrectomy likewise may be necessary.

Discussion.

Dr. Martin Krotoszyner: Dr. Rigdon's paper deals with the very interesting subject of the relation of tuberculosis of the genital to that of the urinary tract, a subject which, at the present time, occupies the mind of the foremost urologists. It is only a matter of a few years ago that tuberculosis of the urinary tract was thought to be mainly located in the bladder. We know now that the primary seat is in one kidney and that the bladder is only secondarily affected. The same is true of genital tuberculosis. It is now generally accepted that the process begins in one epididymis, from where it spreads to the other organs of the genital tract. Quite often the infection travels to the neck of the bladder and the trigone by contact from the prostate. In this way a tubercular ureteritis particularly of the portion of the canal adjacent to the bladder may occur. A positive guinea-pig test may thus be obtained, in case the ureter was catheterized a few inches only. If, on the other hand, the ureter in Dr. Rigdon's case has been catheterized up to the pelvis, this source of error can be fairly excluded. There is no reason why tuberculosis of the urinary and the genital tract should not exist in the same individual and, if sufficient evidence has been brought forward to ascertain that fact, the infected kidney should be removed. The report of such cases as Dr. Rigdon has presented, is particularly commendable since the literature contains very few references on similar observations.

Dr. G. L. Eaton: As to the relative frequency of t. b. of the kidney and the epididymis, there was an article published by Dr. W. J. Belfield recently, referring to the embryological characteristics of the epididymis and kidney, and that in many cases we have a right to believe that a homogeneous infection of the epididymis can occur per se, whereas on the other hand a tubercular involvement of the pelvis may take place at the same time—a polarization of the t. b.—by hematomesis. This

was from the embryological standpoint and to the relative nerve supply of the kidney and epididymis.

Dr. Martin Molony: To treat a case of tuberculosis of the testicle, or any part of the urogenital tract, as a separate entity is entirely irrational. Tuberculosis of the testes is but a single manifestation, in the great majority of cases, of disease in the genito-urinary tract at large. Consequently any separation into anatomical divisions is purely artificial. Tuberculosis of the testicle, being the commonest and most easily recognized form of tuberculosis of the genito-urinary system, indicates a tendency to the development of a generalized tuberculosis.

Clinical Report of Case.—A J., age 44 years. Eight years ago while lifting a heavy weight he got an acute, stinging pain in the right anterior renal region shooting down into the scrotum. The testicle swelled up and he consulted a doctor, who said it was a strain. After the swelling subsided a round lump the size of a walnut remained, which subsequently suppurated. It was opened by another physician who said it was an abscess. For six years after he was in good health and had no bladder symptoms. For the last two years he has had bladder symptoms.

Present condition: Large tuberculous nodule in right epididymis, small nodule in left. Tuberculosis in prostate and vesicles. Tuberculosis in bladder. Enlarged, palpable, tender right kidney.

Referring to the path of infection in urogenital tuberculosis: It is now generally held that the route is, in the great majority of cases, from the kidney to the prostate, and from the prostate to the testicle, the prostate being the gateway of entry to the testes.

Contrast two different groups. The first, gonorrheal urethritis and tuberculosis extending down the cord to the epididymis—lower pole—and not through the blood. Both are in the same category. If you agree that one does, you must admit the other.

The second group called metastatic (hematogenous) by some, such as mumps, typhoid, and variola, affecting through the blood stream, always begin in the testes (orchitis) and not in the epididymis.

Blandini, Walker, and others, in their experiments show, that by inoculating the urethra of guinea pigs, rabbits, etc., with bacillus prodigeosus and staphylococcus that the route of ascending infection to the epididymis and kidney is through the lymphatics, and the descending infections by the mucous tracts—the vas deferens, and ureter.

A REPORT OF TWO UNUSUAL CASES OF HERNIA WITH ABSTRACT OF THE LITERATURE.*

By J. J. A. VAN KAATHOVEN, M. D., Los Angeles.

The cases about to be presented to you, have been selected from records of my service at the Los Angeles County Hospital. The first is one of complete indirect inguinal hernia, on the left side. I bring it before you as it presents many unusual features. The history, in brief, is as follows:

A. M. McC., 67, male, widower, white, cowman by profession. Previous medical and surgical history, negative, except for some slight cardio-renal disturbance, some years ago. No digestive disturbance, no constipation.

History of present condition: Hernia of thirty years duration; he thinks it was caused by a horse falling on him. Patient wore a truss for fifteen years, but hernia has been gradually getting larger. The condition has been irreducible for the past

twelve years. He has been unable to work for the past eight years.

Examination practically negative as to blood and urine; slight systolic murmur, at apex.

Patient walks, supporting the tremendous hernia in his hands. The interne described it, "about the size of a six quart bucket." The mass occupies the position of the scrotum, its greatest diameter is approximately 22½ inches,—its smallest, 17¾ inches,—total length from spine of pubis, 13 inches.

Operation: The usual incision, prolonged downward to bottom of scrotum. Aponeurosis of external oblique is somewhat attenuated, though in good condition. Internal ring has been dragged down to external, presenting appearance of a direct hernia, as is true in most cases of extensive and old hernias. Ring admitted three fingers easily, is oval in shape, longest diameter, three inches, shortest, two inches. Sac easily found and opened at the neck. Somewhat adherent to the fascia and surrounding structures, but not as much so as anticipated. Small intestines adherent to sac, also coils mutually attached.

Contents: Small intestines, practically from ligation of Treitz to ileo-cecal valve, cecum, ascending, transverse, and descending colon, as well as sigmoid; appendix easily recognized, not inflamed nor adherent.

The contents could not be returned to the abdomen, without enlarging the ring and putting the patient in exaggerated Trendelenburg posture. Great care was exercised, in returning gut, to avoid reduction "en bloc," to avoid possibility of subsequent strangulation. Sac freed, twisted, and removed, having been transfixed and tied by iodine catgut.

Repair by Andrews' method—the stretching of aponeurosis having made it ideal for the imbrication. Kangaroo tendon was used for the deep sutures, iodine catgut in fascia, Pagenstecher and silk-worm, in the skin.

Notwithstanding the long duration, the internal oblique and conjoined tendon were in good condition, hence the sheath of the rectus was not opened and repair was accomplished with transplantation of cord. Scrotum, which was three-fourths inch in thickness, was resected to the extent of twice the palm of the operator's hand. Rubber drain placed in lower aspect of wound. Usual dressing.

Prompt healing, but for slight skin infection of scrotum, due to patient's lack of care; discharged from hospital after skin infection had healed.

The points of interest in this case are, first and foremost, the tremendous mobility the abdominal organs may assume under pathological conditions. It is indeed, a startling experience, to find the appendix and cecum in a left-sided hernia.

Secondly, the absence of symptoms in this condition. Notwithstanding the fact that all the patient's absorption and elimination were carried on extra abdominally, through an elipse, three inches by two, he did not suffer from indigestion or constipation.

Thirdly, after returning the abdominal contents to its normal habitat, the patient had absolutely no symptoms, even though all the intestines must have occupied tremendously ptosed and otherwise abnormal positions.

Case No. II. Mr. P., male, single, Jewish baker. Family history negative. Past history negative, except patient has never been very strong. Only heavy work he has done is mixing dough, which he says is very hard work.

Present complaint: Four days before admission, while lifting about 100 pounds, patient suddenly experienced a severe pain and stretching sensation, in both inguinal regions. He continued his

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

work, though suffering considerably, but the next day found he could hardly walk, due to pain in both sides. A physician was called who said he suffered from a double rupture and sent him to the hospital.

Examination: Moderate well developed man of medium stature. General condition negative,—urine and blood analyses negative.

The affected regions present swelling about one and one-half inches, inside of the anterior superior spine, just below Poupart's ligament, on both sides,—the right side somewhat larger than the left. Overlying veins are tortuous and enlarged, giving rise to the preliminary diagnosis of varicose veins.

Palpation reveals a tense, cystic, non-inflammatory mass, giving a distinct impulse on coughing and straining.

Provisional diagnosis of femoral hernia is made, though the position is very unusual.

Operation: Through a four and one-half inch incision, starting at the anterior superior spine of the ilium, following and just below Poupart's ligament, dividing the skin and superficial fascia, the sac is revealed underneath the fascia lata. This being divided, the hernial sac is exposed, found flattened out, under the fascia lata, approaching line of vessels. It is easily freed from surrounding structures; it has a wide neck, is short, about the size of a hen's egg. When opened, sac is found to contain some fluid and omentum. The opening through which the hernia escaped, triangular in shape, lying entirely within the lacuna musculorum, easily admits two fingers.

The sac is pulled well out of the abdomen, perforated and tied off with plain catgut. Four chromic catgut sutures, bringing Poupart's ligament and the underlying muscles and the iliac fascia in apposition, obliterates the opening into the abdominal cavity. The fascia and skin are closed with continuous and subcutaneous catgut.

A similar operation was performed on the left side. Here the sac was smaller, not flattened out as much under the fascia lata, hence did not even approach the vessels or nerve, as it did on the right side. Did not contain omentum.

Healing was uneventful, patient getting out of bed, contrary to orders, on the seventh day. Discharged from hospital, in three weeks. The patient was seen in the office two months later, at which time he appeared perfectly well, there being no symptoms of any sort and no impulse upon coughing.

The anatomical and pathological findings of this case were so unusual, that in an effort to throw some light on the condition, I wrote to many men of great surgical experience and also reviewed the literature on extra vascular femoral hernia. Drs. Chas. Mayo and Judd, of Rochester, Edward Martin, Chas. Frazier and John B. Deaver, of the University of Pennsylvania, Dr. Ginsburg, of the same institution, in over 3000 autopsies, the Drs. Gibney, of the Hospital for Crippled and Ruptured, of New York, all assured me they had never met this unusual form of hernia. An abstract of the available literature, here and elsewhere, is remarkable only for its paucity.

The best articles are as follows: Moschowitz of New York, in a contribution on "Prevascular Femoral Hernia" (*Annals of Surgery*, June 1912, p. 848), draws attention to the fact that these unusual femoral hernias are frequently associated with injuries of the hip joint, such as dislocations, especially those of congenital and other types requiring frequent manipulations. Narath's series of

six is particularly convincing. No such injury or lesions can be found in this case.

E. Wyllys Andrews, in *System American Surgery*, p. 587: The bowel may exceptionally pass down externally, to sheath of femoral artery. This anomalous form has been called "external femoral hernia" by Bahr (1898) and cases have been reported by McIlvane, Narath, Fabiscius, Cloquet, and Axhausen (last probably *Deutsch Zeitschrift für Chir.*, March and April, 1906). The route of these hernias is between the ileopectineal ligament and femoral artery, at which point the anatomical studies of Leinhardt show that a weak place exists.

The very oblique direction of this ligament, from Poupart's ligament backward, leaves a triangular space, wider in front, which is somewhat unsupported in the immediate vicinity of the vessel sheath.

Hesselbach Sr. describes bands which pass from the anterior iliacus sheath to the transversalis fascia and crural arch, forming a sort of guide or septum, leading toward the weak point.

External femoral hernia may occur corresponding to the routes taken by the escaping bowel.

- (1) Outside the great vessels.
- (2) Alongside the deep epigastric vessels.
- (3) Alongside the muscle, behind the vessels.

Maydl also describes a still rarer form which makes its way inside the vessel sheaths.

Bull and Coley, writing in Dennis' *System of Surgery*, state in re femoral hernia:

In very rare cases, the protrusions may appear directly over the femoral vessels, or even external to the vessels. Such a case has been observed at the Hospital for Ruptured and Crippled, in New York. It occurred in a child three years old and the same form of hernia was found on both sides. The protrusion was the size of a small hen's egg and the opening was slightly external to the femoral artery.

Coley, in Keen's *System of Surgery*:

Very rarely, the (femoral) hernial sac is found directly over the vessels. This type being designated as "external femoral hernia," examples of which have been described by Narath (*Archiv. für Klin. Chir.*, 1903, Bd. 71). He discovered this form of hernia was often the result of trauma, particularly following attempt at reduction of congenital dislocation of the hip. Still more rarely, the hernia may emerge external to the vessels, or through the lacuna musculorum.

De Gamo (*Book on Abdominal Hernia*) says:

Macready (*Treatise on Ruptures*) gives an illustration of a case where three femoral sacs were found upon the same side in one patient. In Macready's case, one protrusion was through Gimbernat's ligament, close to the spine of the pubis, one at its usual place, and the third, just to the outer side of the femoral vessels. Condition not recognized during life.

Page 584—Bergman-Bull *System Surgery*: Hernia cruralis externa, as described by Hesselbach, is found especially in individuals with a broad

pelvis. It commences in the region of Poupart's ligament and extends downward, in conical manner, the base being quite broad. The tumor is flat, because it lies beneath the fascia and is covered, besides, by the muscular fascia, the fascia lata, and the iliac fascia.

Bahr reports three cases which developed after injury in region of hip.

Narath reports another variety of external hernia which appeared after operation for congenital hip. He reports six such cases in children between seven years and eleven years, and some data on retro-vascular hernia and cruro-properitoneal hernia.

While many references are made to this abnormal variety of femoral hernia in the literature, I have failed to find an explanation of its occurrence. The etiology remains unexplained. That the defect in the muscular and fascial structure is congenital, seems even more certain in these cases than in the more usual types.

Though the history of three days' duration in this case is misleading, there is no doubt in the writer's mind, that the onset merely marked the descent of an unusual amount of omentum, or indeed, intestines, into the already existing sac.

Study of the anatomy of the part, as described by Hesselbach, Cloquet, and Sir Astly Cooper, of the last century, and the more modern anatomists, demonstrates the following facts:

The iliac fascia is attached to the internal arcuate ligament and covers the entire iliacus and psoas muscle. On the mesial surface, it is continuous with the pelvic fascia. Along the outer two-thirds of Poupart's ligament, it is attached to that structure. The inner third passes behind the femoral vessels, forming the posterior portion of the sheath of the vessels. In doing so, it divides the space under Poupart's ligament, into a muscular compartment (lacuna musculorum), and a lacuna vasorum.

It is my opinion that the extra-vascular, or Hesselbach hernia, is dependent upon one of two, or both, anatomical defects, viz: a congenital partial lack of the iliopsoas, or a faulty attachment of the iliac fascia, it being fastened to Poupart's ligament only along its outer one-third or one-fourth, rather than the normal two-thirds, causing a weakened locus, through which the hernia escapes.

THE MENDELIAN LAW AND ITS RELATION TO INHERITED CONDITIONS OF THE EYE.*

By BENJ. F. CHURCH, M. D., Redlands.

We owe largely our knowledge of the workings of inheritance in hybridization to the unpretentious studies of an Austrian monk, Gregor Mendel, who, although a contemporary of Darwin, was probably unknown to him. For eight years, in the middle of the last century, Mendel carried on original experiments by breeding common peas in the privacy of his cloister garden at Brunn.

As Galileo and others who lived beyond their times, Mendel's interpretation of nature's law was not appreciated or understood until after his death.

MENDEL'S LAW.

Mendel's cross-breeding experiments on peas showed certain numerical relations, which is now known as "Mendel's law," briefly formulated as follows: When parents that are unlike with respect to any character are crossed, the progeny of the first generation will apparently be like one of the parents with respect to the character in question. The character that expresses the character upon the offspring in this manner is called the *dominant*. When, however, the hybrid offspring of this first generation are in turn crossed with each other, they will produce a mixed progeny, 25 per cent. of which will be like the dominant grandparent, 25 per cent. like the other grandparent, and 50 per cent. like the parents resembling the dominant grandparent.

Mendel found that when peas of a tall variety were artificially crossed with those of a dwarf variety, all of the resulting offspring were tall like the first parent.

But, when these tall cross-bred offspring were crossed with each other, the resulting progeny were three tall to one dwarf.

On further breeding of the dwarf peas thus derived, they all came true, producing only dwarf peas. On the other hand, the tall ones were of two varieties, one-third "pure" like their tall grandparents, and two-thirds of them "hybrid," giving in turn the proportion of three tall to one dwarf, like their parents. Mendel termed the character, which, in this case tallness, the *dominant*; and the latent character which receded from view, in this instance dwarfness, the *recessive*.

As expressed by Bateson, the essence of the Mendelian principal is *first*, that in a great measure the properties of organisms are due to the presence of distinct detachable elements, separately transmitted in heredity; and *secondly*, that the parent cannot pass on to offspring an element which it does not itself possess. Each germ cell, ovum, or sperm may contain, or be devoid, of any of these elements; and since all ordinary animals and plants arise by the union of two germ cells in fertilization, each resulting individual may obviously receive in fertilization similar from both parents, or from neither, in these cases the offspring is "pure" bred for the presence of the character in question or for its absence. But it may be formed by the union of dissimilar germs, one containing the element, the other devoid of it.

In this case we call the individual cross-bred, or heterozygous in that respect.

CONDITIONS SHOWING DOMINANT DESCENT.

In man, many of the more definite hereditary diseases and malformations follow one or the other of the systems with which Mendelian analysis has familiarized us, dominants or recessives.

Having a dominant Mendelian inheritance, may be mentioned various bony and cartilaginous malformations, several varieties of skin and nervous diseases, pre-senile cataract, strabismus, ectopia lentis, coloboma, distichiasis, night blindness and retinitis pigmentosa. All these conditions descend as dominants.

* Read before the Southern California Medical Society, at Riverside, May 6, 1914.

It is characteristic of them that unaffected members of the families do not transmit these defects. In the human examples the individuals affected are almost always heterozygous, and hence, among the children born to their marriages with normal persons, we expect to find the affected and unaffected to be in equal numbers.

The occasional occurrence of strabismus in children of parents who are apparently not affected has caused confusion in the classification of this defect.

My observations lead me to believe that strabismus, or the conditions which produce it, is always a dominant hereditary character. The supposedly sporadic cases have, in reality, a hereditary foundation in a latent deviation of the eyes from parallelism in one or both parents. This, in the child, may develop into squint if their refractive error, which they most all have, is not corrected.

Donders first called attention to the close association of accommodation and convergence. And, as three-fourths of all cases of concomitant internal strabismus are hyperopic, their necessary accommodation, for good vision, encourages a convergent deviation.

Many family records could be reported, which confirm a definite ratio of dominant descent in accordance with Mendel's law. Suffice with one: Mr. —, hyperopic, internal squint when a child. Eyes straightened by wearing glasses to correct his far-sightedness. Wife —, hyperopic with internal squint, for which she underwent an operation. Three children; all far-sighted and cross-eyed, internal. One of the children's eyes remains straight while wearing correcting lenses.

RECESSIVE CONDITIONS.

Of recessive conditions in man we have less abundant evidence. Inasmuch as they usually appear from the unions of parents both apparently normal, though heterozygous for the condition, their occurrence is rare and sporadic. It is fairly well established, however, that feeble-mindedness, paralysis agitans, albinism, myoclonus, epilepsy and alcaptonuria come under the head of recessives.

They may all appear in children of normal persons, with special frequency as the result of marriages of related parents. Bateson says there can be no reasonable doubt that these conditions are due to the loss of some factor present in normal persons.

Albinism acts as purely a recessive character both in man and in other animals. An albinic individual mated to a normal individual will have no albino offspring. The children of this mating, however, would have the germ plasm with respect to albinism, and in cousin marriages might produce some albino children.

DESCENT OF SEX-LIMITED TYPE.

Another entirely different group is that in which the descent of abnormality is limited wholly or in part by sex.

The best known examples are those of the descent of color-blindness, hemophilia and one of the forms of nystagmus.

It is well known that color-blindness affects males with much greater frequency than females. Normal women transmit the affection to their sons, but

it is rarely, if ever, transmitted by the father. It is well established that sons of color-blind males do not inherit the abnormality, and therefore can not transmit it. The daughters of color-blind fathers inherit it, and though it does not appear in them, they all probably have the power to transmit it to their sons. Sons of color-blind women will all be color-blind.

The same system of descent, sex-limited, is also manifest in one form of nystagmus as shown by Nettleship, and in hemophilia.

Only seven cases of color-blind women are known in the world. They had seventeen sons, all of whom were color-blind.

The phenomenon of color-blindness appears to be clearly linked with the determiner for sex. It requires a duplex, or homozygous dose of the determiner for color-blindness to produce a color-blind female, while only a simplex, or heterozygous, dose is needed to produce a color-blind male.

These facts amply prove that the female is homozygous and the male heterozygous with respect to sex. A color-blind male mated to a normal female will produce no color-blind offspring, although the females will be "carriers" of color-blindness, possess the factor in a simplex form and will carry it *for the female* in a latent condition.

Sons of color-blind father and normal mother will be absolutely free from the defect and can not produce color-blindness in any of their offspring when mated with a normal strain. If, however, the "carrier" daughters from such a parentage mate with normal individuals, the expectation is that one-half of the sons, and none of the daughters, will have the defect. Of the daughters, one-half will carry the color-blind determiner in simplex form and may produce color-blindness in their sons but not in their daughters.

The idea of unit characters, capable of being inherited independently of one another, is one of the most important conceptions of the science of biology, the direct result of Mendel's work. Its conception leads to a complete change of our ideas regarding heredity, since we no longer look upon the individual as a unit, but find that we are compelled to study the independent characters of which the individual is composed.

Naudin long ago characterized the individual as a living mosaic.

Formerly it was believed that individual traits would become attenuated, blend and be lost in the melting-pot by repeated union with uncontaminated stock.

We know now that the unit characters do not blend; that after a score of generations a given characteristic may appear wholly unaffected by repeated union with foreign germ-plasm.

Our attention must be directed to the individual, as a bearer of a potentially immortal germ-plasm which has immutable traits for good or evil.

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CONSERVATIVE AMPUTATIONS OF THE LOWER EXTREMITIES.*

By CHAS. E. PHILLIPS, M. D., Los Angeles.

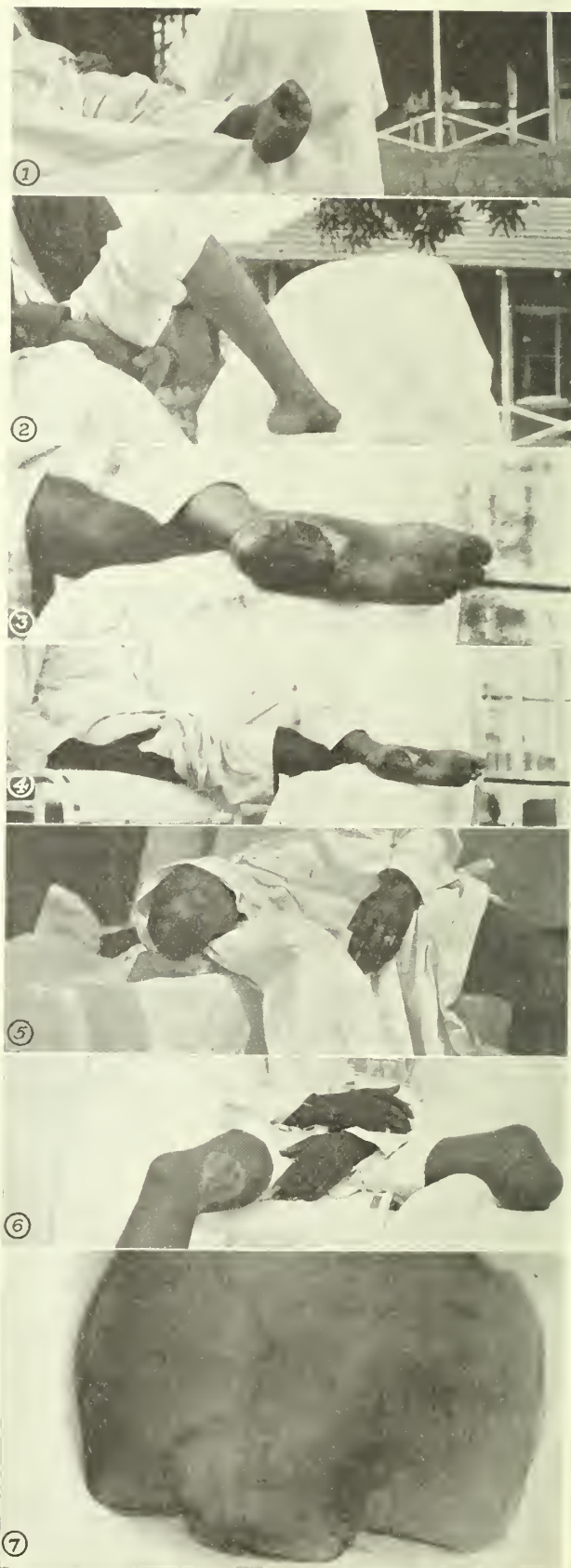
A subject upon which volumes have been written is too large to be reviewed in the short space of time at my disposal. Hence I will merely touch upon those things which have been out of the ordinary in my experience covering a period of nearly eight years in the chief hospitals of the Canal Zone, Panama, comprising one of the greatest accident clinics in the world.

Amputations are not given the serious consideration that they deserve. For example: A patient is brought to the hospital with a crushed foot. It is apparently too badly damaged to be saved, or at least the anterior portion is destroyed and there is insufficient uninjured tissue for the formation of adequate flaps. The patient is informed that the foot will have to be amputated. His consent is obtained; he is anesthetized and a stereotyped amputation of the leg is performed. The man's occupation, station in life, financial condition, whether he is to be permanently incapacitated to follow his usual occupation, is not considered. Perhaps he is a common laborer of slight means whose work frequently causes him to stand in water. The amputation of this man's leg necessitates the purchase of an artificial leg which he cannot afford. The artificial leg will not long endure in his occupation if it is procured. Had these facts been carefully considered at the time a modified foot amputation might have been done, taking, perhaps, infinitely more time and care, and causing greatly increased suffering, while the appearance when completed is not good but in spite of all, the man's usefulness is not destroyed. Possibly he walks with a limp, but he is able to work in almost any place and under almost any conditions and—what is of vital importance—is self-supporting.

On the other hand if the man is a teacher, or business man leading a sedentary life we should favor a leg amputation even when a partial foot amputation were possible. He would then be able to get a well fitting and carefully adjusted artificial leg which would not be apparent to a casual observer and which his means would always enable him to procure and keep in order.

What holds good in regard to the foot may with equal force be said of the leg and thigh. So we see the importance of taking all factors into consideration before amputating a leg. That is, we should first consider the condition of the leg then the general condition of the patient, physical, mental and financial, occupational and temperamental. What would be eminently the proper thing to do in one case would not do at all in a similar local condition in another case from a different station in life.

First, I will take up injuries to the plantar pad. We have ordinarily considered that loss of any considerable portion of the plantar pad led to absolute disability and I have seen many legs amputated on account of that condition.



* Read before the Medical Symposium Society, June 30th, 1914.

The first case that directed my attention to what could be done in these cases, was a case, L. N., brought to Ancon Hospital with traumatic amputation of right leg in the middle third and a crush of the anterior part of the left foot with loss of the plantar pad back as far as the heel. See Figs. 1 and 2. An amputation of the left foot, which was apparently indicated, would result in a cripple who would not be self-supporting. Realizing what was at stake, I trimmed up the lacerated tissue, cut off the metatarsal bones where they projected out too far, carefully sterilized the lacerated area and dressed it. After the lapse of six weeks, the bones were covered with good healthy granulations and a Thiersch skin graft was done, covering a good portion of the plantar, sides and portion of the dorsum of the stump. The graft took perfectly and within a month the patient was able to get around on it with the aid of crutches. He was furnished an artificial leg for the opposite side and left the hospital. Three years later he returned to the hospital for a new artificial leg, when these pictures of the foot were taken. He stated that the skin-grafted area had given him no trouble at all and that he had been able to work uninterruptedly for three years. He stated that occasionally he would grow corns on the grafted area and would have to trim them. Walking on it caused no abrasion or ulcerations.

Case two, C. P., injured July 16, 1913, was similar to case one except the heel pad with a portion of the os calcis was crushed off at the same time the opposite leg was crushed. Realizing the hopelessly crippled condition that would result from an amputation of both legs, the lacerated left heel was cleansed and dressed after the right leg was amputated in the upper third. Dressings were continued until the remainder of the os calcis was well covered by granulations when the heel was skin grafted, September 18, 1913, two months after the injury. Figs. 3 and 4. In two months more the patient was able to walk on the grafted area by aid of crutches. Walking caused the grafted area to thicken and no sign of abrasions appeared.

These two cases illustrate what it is possible to accomplish in plastic work on the soles of the feet and exemplify the old adage that "growth is the correlative of function." The thin Thiersch graft becomes thickened and indurated with use, capable of performing its function admirably. There is one point to be remembered. It is essential that the entire denuded area be covered with the graft because scar tissue between grafts will not stand use without becoming abraded.

Now I shall consider the old stereotyped amputations through the foot such as Chopart's, Lisfranc's, Pirogof's and others' briefly. In my opinion they should seldom be considered operations of election but they should be considered in every case where it is necessary to remove a portion of the foot. Many surgeons will not perform an operation through the tarsals because they consider it unsatisfactory and when amputation is needed elect to perform it through the middle third of the leg.

In my work a large majority of the cases were from the poor laboring class and I went on the assumption that a poor leg, which they would always have with them, i. e., their own, was better than an artificial leg which they would not be able to keep in repair or replace when worn out. Then, anyway, when a leg is not satisfac-

tory it can be cut off. Therefore, I tried the various methods a number of times and watched the results carefully and finally, while I got some very good results with other methods, they were not uniformly so I practically discarded the amputations through the tarsals except by the Pirogof method.

The Pirogof amputation, as you all know, consists in cutting of the articular surface of the tibia and fibula, and the upper portion of the os calcis and fixing the remainder of the os calcis on the ends of the tibia and fibula. This results in a shortening of about two inches and the patient walks on the heel. While this results in a limp, I must say it is the most satisfactory tarsal amputation we have. A man doing ordinary hard labor can get along fairly well with this sort of amputation and he isn't absolutely dependent upon a mechanical appliance to get about.

When the entire foot must be removed we find the results more satisfactory if we go to the middle of the leg or even to the junction of the middle and upper thirds of the leg to amputate, not to start the amputation there, but to so cut the flaps that the bones may be cut there. One word of caution repeated—if the amputation is at or above the junction of the middle and upper thirds, a resection of the remainder of the fibula will save trouble and annoyance.

When we come to amputations in the upper third of the leg we fight for every inch in length of stump. A stump four inches long below the knee enables the patient to manage an artificial leg quite well but a stump only two inches below the knee hardly gives any advantage over a knee amputation, hence our utmost efforts to retain a sufficient length below the knee. In a few suitable cases where there was not tissue for flaps and the knee joint and a few inches of tibia remained, I have resorted to the expedient of dressing the wound open until the bone is well covered with granulations and then cover it by means of a musculo-cutaneous flap from the opposite leg and thigh. This method I reported with a couple of cases in the *Journal A. M. A.* of November 15th, 1913.

Cut five shows the first case treated this way nearly five years after I performed the operation. The other case reported in the *Journal* was one of a thigh amputation. The musculo-cutaneous flap to cover was taken from the opposite thigh beginning nearly in the gluteal fold and was about six inches square. Unfortunately, I have no satisfactory picture of that case.

I have now another case which I desire to report, F. E., admitted to Colon Hospital, May 18, 1913, with a crush of the left leg at the junction of the middle and upper thirds. Anterior tibial vessels were destroyed but as there seemed to be slight circulation remaining in the posterior tibial vessels an attempt was made to save the leg. Two days later, however, it was seen the attempt had been unsuccessful. Gangrene had set in and it was necessary to amputate. The gangrenous tissue was cut off, leaving the end of the stump wide open—the tissue and skin retracted nearly to the knee, while about four inches of tibia remained. This was dressed until the end

was covered with good granulations. On July 28, 1913, a little over two months after the amputation, I performed an autoplasic operation covering the protruding bone by means of a flap from the opposite thigh. Sixteen days later the flap was severed from the parent leg and the denuded area was skin grafted. Fig. 6 shows the final result of the operation.

We now come to a class of cases where it is impossible to save by any means at our command a useful stump below the knee. I have reference to disarticulations and amputations through or near the knee joint. Disarticulations have not been satisfactory. The osteoplastic amputation of Gritti has been a failure as far as furnishing a satisfactory end bearing stump. The same may be said of Stokes's modification of the Gritti operation. In fact, disarticulations of the knee and amputations through the lower part of the femur have been so unsatisfactory that most operators have abandoned them entirely and when they find it impossible to amputate through the leg they select the junction of the middle and lower thirds of the thigh as the point of election. But in doing this, shock, liability to infection and subsequent usefulness are sacrificed to a greater or less extent. Shock increases with every inch removed from the thigh. A knee joint amputation offers only a moderate shock, a mid-thigh great shock. The opening up of the marrow canal and severing the bulky muscles increase the danger of infection when it occurs, and finally the more or less conical thigh stump does not afford a satisfactory attachment for prosthetic appliances.

With these facts in mind I devised a knee joint amputation which I believe combines all the advantages of disarticulation with the osteoplastic operation. In my hands and in the hands of others it has been tried and found to be very satisfactory. By this operation both the condyles and patella take their relative share of the weight, and we have a condition simulating that of the acutely flexed knee which will satisfactorily take the weight of the body. I described the operation in the *Journal A. M. A.* of January 6th, 1912. It consists of a disarticulation with a long anterior flap reaching from the tuberosity of the tibia and containing the patella and patella tendon. This flap is turned up and the posterior surface of the patella sawed off, likewise the edges are sawed off with a bevel so the anterior and upper portion of the patella is narrower.

A piece of bone is now chiseled from the intercondyloid notch in such a manner as to leave the notch broader at the bottom and toward the popliteal space. The patellar tendon is grasped, the patella drawn forcibly down and allowed to dovetail into the space prepared for it. The patella tendon is now sutured to the hamstring tendons and the wound closed.

Fig. 7 shows a skiagraph of the lower end of the femur several years after the operation. The patella can be seen in outline.

This patient, a railroad conductor, was brought to Ancon Hospital suffering from a crush of the leg in the upper third, so high up that by any method described at that time other than a Gritti,

a thigh amputation would have been necessary. By means of this operation, however, I was able to give him an end bearing stump through the knee and by thus pulling down the patella with its attached skin and fascia, I had enough tissue to cover the end of the stump, the suture line running posterior to the bearing surface. A few months after the injury he resumed his duties as a conductor and worked eight to ten hours a day on his feet without causing discomfort or abrasion on the end of the stump.

In conclusion, I desire to emphasize the necessity of considering everything before undertaking an amputation of the lower extremity. The patient's age and conditions, physical, financial, mental, temperamental and occupational should be weighed carefully in order to select the means of best minimizing his disability. I would recommend for your careful consideration the possibility of repairing serious and even apparently hopeless injuries to the lower extremities by means of plastic operations. The use of the Thiersch graft to cover defects in the plantar surface of the feet. The use of the autoplasic operation to save adequate length of stump in leg and thigh amputation and lastly a knee joint amputation that has been found to be both practical and satisfactory.

Illustrations.

Figs. 1 and 2—Showing the ultimate result of a skin graft on the plantar surface of the left foot, right leg being amputated. By thus preserving the foot the patient was able to work and become self-supporting.

Figs. 3 and 4, Case 2—Showing amputation of right leg and plastic on left heel.

Fig. 5—Showing result of autoplasic operation by which a musculo-cutaneous flap is transferred from sound leg to cover end of stump. Picture taken four years after operation.

Fig. 6—Latest case of autoplasic operation showing the large amount of tissue transposed and area from which it was taken.

Fig. 7—Skiagraph of lower end of femur taken several years after the amputation, showing the final result of dovetailing the patella between the condyles of the femur. The patella has grown into place and furnishes an ideal end bearing stump.

A CASE OF ABDOMINAL PREGNANCY.

By WILLIAM HIMMELSBACH, M. D., Watsonville.

Many obstetricians believe primary abdominal pregnancy only possible theoretically, and according to Webster it is impossible for the ovum to form an attachment, where it can develop, except in tissue derived from the Millerian duct, and apparent abdominal pregnancy, is secondary to tubal origin.

Bumm claims, in rare cases, that by pressure of the ovum, the tube gradually yields, and the tear leaves uninjured the placental situation. Hemorrhage is but slight, and the usual catastrophe avoided; but the fetus slips through the opening of the sac, sometimes accompanied by the membranes, or if these are torn, naked into the abdominal cavity, and there undergoes further development; that is, a tubal pregnancy is converted into a secondary abdominal pregnancy, the placenta re-

maining fixed at its original site, and by branching out, adheres to the peritoneum, broad ligament, etc.

In the following case I do not believe the ovum did anything of the kind, but instead of progressing forward, into the uterus, migrated backward, fell into the abdominal cavity, and striking a favorable spot, underwent further development.

Mrs. R. Presented herself for examination May 1st last, and gave the following history: Age 26, one living child, age seven years, birth normal. No pregnancy intervened between first and last. Menstruation was regular, up to the early part of September last, when it ceased. In the latter part of March, this year, felt fetal movements, which were not apparent two weeks later. Sense of fullness in the breasts, never had abdominal pains or hemorrhage, however slight, and passed no shreds of tissue.

Examination revealed on inspection an abdominal enlargement extending midway between the pubes and umbilicus, which felt boggy; above this, was a soft fluctuating mass like a cyst, which by pressure in the median line, could readily be moved either to the right or left, and through such movement, became quite tense. There was also discovered what was diagnosed a fetus, but it could not be determined whether within the uterus or not. No fetal heart sounds were heard. A vaginal examination disclosed a soft, patulous cervix. After repeated examinations, covering a period of four weeks, and the state of affairs having a marked depressing influence upon the patient, and being positive the fetus was dead, wherever it was, I decided upon removal.

On May 27th, under ether administered by Dr. John F. Peattie, I first carefully inspected the uterus, dilated, found a depth of four and a half inches, but empty.

Next an abdominal incision was made in the median line, three inches in length, beginning one inch below the umbilicus, and on entering the abdominal cavity placental tissue protruded, which was found entirely attached to the omentum, while at the same time a membranous, rather tense sac, bulged out. The placenta was carefully separated from the omentum, and the omentum only; suddenly the sac ruptured and with the gushing of the liquor amnii, the hands and arms of a fetus presented. It was delivered, with the placenta in a few minutes. It proved a male of about five months, the cord was a half inch in diameter and twelve inches in length. Small amount of meconium adhered to anus. No hemorrhage followed. The closest inspection failed to reveal any sign of a ruptured tube, or a ruptured uterus. Both were intact. The incision was closed in the usual manner. The patient made an uneventful recovery.

NEVADA STATE MEDICAL ASSOCIATION: MINUTES OF THE ANNUAL SESSION.

Reno, Nevada, Oct. 13, 1914.

The eleventh annual meeting of the Nevada State Medical Association was called to order in the Commercial Club Rooms at 10 a. m. by Dr. A. P. Lewis, president. Invocation by the Rev. Samuel Unsworth.

The minutes of last regular and one special meeting were read and approved.

The president, Dr. Lewis, deferred his address,

but asked that the following propositions be taken up for consideration:

(1) That a new official organ be selected, or the advisability of making a change.

(2) The increasing of the dues to six dollars a year.

(3) The appointment of a committee to act with the secretary on the selection and preparation of material for our Medical Journal.

(4) That we ask the A. M. A. to elect all state secretaries as members ex-officio to the house of delegates.

(5) That we take up and reach a conclusion whether or no we adopt Medical Defense.

(6) The question of holding our 1915 meeting during the week before the A. M. A. meeting.

(7) That a committee be appointed to represent Nevada in the work being carried on by the American Association for the Prevention of Cancer.

The secretary reported as follows:

No. of physicians in the state.....	about 150
No. of physicians members of state association	
(4 honorary).....	63
No. of physicians died.....	2
No. of physicians moving from the state.....	11
No. of physicians dropped for non-payment of dues	27
No. of physicians new members.....	11

CASH ACCOUNT.

Cash on hand Oct. 14, '13.....	\$ 47.45
Nov. 14 Riverside Hotel, ad on program:	10.00
Nov. 18 J. T. Reese, dues '13.....	5.00
Nov. 29 R. R. Craig, dues.....	5.00
Nov. 29 Nye Co., dues '13.....	6.00
Dec. 10 Nye Co., dues.....	9.00
Dec. 12 A. J. Hood, dues '13.....	5.00
Dec. 17 G. L. Servoss.....	5.00
Dec. 22 A. J. Hood.....	5.00
Dec. 24 C. W. West, dues '13.....	5.00
1914.	
Jan. 7 Nye Co.....	6.00
Jan. 12 F. M. West.....	5.00
Jan. 13 C. W. West.....	5.00
Jan. 19 G. L. Balanger.....	5.00
Feb. 13 E. B. Todd.....	5.00
Mar. 16 Nye Co.....	9.00
Mar. 20 P. J. Mangan.....	5.00
Apr. 13 Esmarelda Co.....	5.00
Apr. 15 A. C. Olmstead.....	5.00
Apr. 16 J. A. Russell.....	5.00
May 12 G. U. Hall.....	5.00
May 27 H. G. Knapp.....	5.00
June 26 A. D. Field.....	5.00
June 27 C. E. Swezey.....	5.00
Sept. 14 H. A. Paradis.....	5.00
Sept. 28 F. C. Pache.....	5.00
Oct. 13 Due from Washoe Co. Society..	97.00

\$288.45

EXPENSE ACCOUNT.

1913.			
Nov. 21	Carbon 25c, stamps \$2.	Ck No. 36	\$ 2.25
Dec. 2	Letterheads Sutherl'd.	Ck No. 37	5.00
Dec. 12	Servoss, Nevada Med.	Ck No. 38	7.00
Dec. 22	Samuels, Ex. P. G. pro-		
	grams	Ck No. 39	.65
1914.			
Jan. 12	Stamps \$2; April 1,		
	stamps \$2	Ck No. 40	4.00
Apr. 27	Green S. & Lake; en-		
	velopes	Ck No. 41	4.50
June 26	Nevada Med.	Ck No. 42	47.15
July 29	Stamps	Ck No. 43	2.00
Aug. 29	Carbon copy 25c; Sept.		
	16 stamps, \$5	Ck No. 44	5.25
Sept. 29	G. S. & Lake, pgms. .	Ck No. 45	12.50
Oct. 6	Telegram, 75c; St.		
	Louis Button Co		
	\$18.50	Ck No. 46	19.25
			<hr/>
			\$109.55
Oct. 13	Bal. cash on hand.		\$178.90

During the year I have written 600 letters and sent out 450 circular letters, also 300 programs.

The program was carried out as arranged, with the exception of Drs. McCleave and Servoss, who were unable to appear on account of illness; Drs. Willey, Maclean, Bergstein and Hartzell were not present when their papers were due.

The "special lecture" Tuesday night was of especially interest and was well attended. (Dr. John Zeig.)

Almost every member present said our program was the best we have had.

Tuesday noon we lunched with Washoe County Society. Wednesday P. M. Eli Lilly & Co.'s representative, Mr. Warren, invited the association and the Dentists, Pharmacists and their friends to the Grand Theatre and showed how pharmaceuticals are prepared.

Wednesday evening we dined and danced at the Riverside.

Thursday noon we lunched with Mr. Slater, at the Nevada Packing Co.'s plant, inspected the plant and had a thoroughly good time for a couple of hours. Dr. Webster showed some very interesting specimens.

Thursday night most of the members and visitors attended the theatre in a body.

Dr. Power's paper on Ab-Articular Gout was exceptionally good.

One "extra" on the program, that was especially interesting, was Dr. Ferrell's report of a case of human anthrax.

The election of officers resulted in the selection of—

- Dr. P. J. Mangan, Winnemucca, President.
 - Dr. J. C. Ferrell, Fallon, 1st Vice-President.
 - Dr. A. J. Hood, Elko, 2nd Vice-President.
 - Dr. M. A. Robison, Reno, Secretary-Treasurer.
 - Dr. R. St. Clair, Reno, Trustee, 3 years.
 - Dr. M. R. Walker, Reno, Delegate A. M. A.
 - Dr. A. P. Lewis, Reno, Alternate.
- The president was directed to appoint a com-

mittee of three to pass on all papers presented to the secretary for publication in our official journal.

Dr. J. L. Robinson was selected to represent our association on the A. M. A. Committee for the Conservation of Vision.

The following resolution was adopted:

To the House of Delegates of the A. M. A.:

Whereas, The Secretary of the Constituent Association is, by reason of his official position, most familiar with the needs of the profession in the various states; now therefore, be it

Resolved, That the Nevada State Medical Association in convention assembled, petition the House of the A. M. A. to so amend the Constitution and By-Laws as to make the secretary of each Constituent State a member of the House of Delegates, ex-officio.

Wednesday noon Dr. Gibson took the members to the County Hospital and exhibited a very unusual case of leprosy.

A letter was read from Dr. Nesmith, asking that action be taken toward securing compensation to the profession attending members of the industrial compensation act.

On motion of Dr. Ferrell it was referred to the Judiciary Committee.

On motion of Dr. Samuels, the Judicial Committee were instructed to act with the County Societies, especially with the Legislative Committee of Washoe County Society, to prepare such bills for the next legislature as may seem most needed; but especially for the above condition, also for providing compensation to the Health Officers and Vital Statistics reports in the small cities and country places.

On motion of Dr. Samuels that The California State Journal of Medicine be adopted as our Official Organ, after much discussion it was carried by a vote of 17 yeas, 2 noes.

The increasing of the dues to \$6.00 per year was left with the Trustees and Judicial Committee, but ordered if they decide on Medical Defense.

The president was directed to appoint a committee of three to act with the secretary as an Editorial Committee.

The matter of Medical Defense was referred to the Judiciary and Trustees, and if they find it feasible, to put it in force January 1, 1915, at the same time raising the annual dues to \$6.00 per year, \$1 of which will go into the Medical Defense Fund, and \$1 to the California State Medical Journal, so long as they act as our official journal.

The president was instructed to appoint a committee of three to serve as members of the American Association for the Prevention of Cancer.

The secretary explained his reasons for asking that the 1915 meeting be held just before the A. M. A. meeting in San Francisco, and it was decided to leave the matter in the hands of the secretary and council, with the understanding that they make such arrangements as they find will best suit.

The proposed amendments to the Constitution and By-Laws of the A. M. A. were referred to the Judiciary Committee, they to report to delegate and A. M. A., also the matter relative to hygiene and public health, as referred to on page 50 in Proceedings of House of Delegates, 1914.

A vote of thanks was extended to Washoe County Medical Society for their entertainment at lunch; to Mr. Slater for his very bountiful lunch at the Nevada Packing plant; Dr. Gibson for courtesies extended the members; to Mr. Warren for his "movie" show; to the Commercial Club for the use of their rooms.

The secretary acknowledged the great assistance rendered by Drs. Huffaker and Samuels.

Words almost fail to express our appreciation of the great good and pleasure we derived from having our guests from San Francisco.

Number of doctors in attendance, 48; other professional men, 14; and many nurses, dentists and pharmacists, attorneys, ministers and teachers.

Rev. Samuel Unsworth, Mr. Alcaitor (U. S. Weather Bureau), Prof. Fransden, Mr. Benjamin, Drs. Mack, Williams, Boland, Zeig, San Francisco; Pickard, Mangan, Hood, Hartzell, Kistler, Mooser, Ferrell, Maloney, Ahlers, Samuels, Boyd, Ely, Alderson, Brown, Ostroff, Lewis, Huffaker, Wilcox, Robison, Gibson, Cunningham, Pickard, Cunningham, Power, Shaller, Gregory, Edwards, Asher, Turner, Morrison, Servoss, Nichols, Rothganger, Johnstone, Mangan, McKee, Robinson, Lewis, Knapp, Walker, Kitchen, St. Clair, Martin, J. B. Harris and Gardner.

NEVADA STATE MEDICAL ASSOCIATION.

M. A. ROBISON, SECRETARY-TREASURER, RENO.

Officers and Committees for 1915:

President, P. J. Mangan, Winnemucca; Vice-President, J. C. Ferrell, Fallon; Second Vice-President, Arthur J. Hood, Elko; Secretary-Treasurer, M. A. Robison, Reno; Trustees—1 year, C. E. Secor, Tuscarora; 2 years, C. W. West, Elko; 3 years, R. St. Clair, Reno.

Committees:

Membership—P. J. Mangan, J. C. Ferrell, M. A. Robison.

Judicial—J. E. Pickard, F. M. Nesmith, C. E. Earley.

Scientific Work and Program—B. F. Cunningham, R. St. Clair, W. L. Samuels.

Necrology—H. Ostroff, F. M. Wast, E. T. Krebs.

Entertainment—W. L. Samuels, J. A. Asher, R. K. Hartzell.

Delegate to A. M. A.—M. R. Walker; Alternate, A. P. Lewis.

Public Health—M. R. Walker, F. F. Owens, J. L. Robinson.

State Organizer—H. A. Brown.

Council—A. C. Olmstead, J. A. Russell, D. A. Turner, C. E. Bulette, G. M. Gardner, F. C. Pache, A. McIntyre, G. L. Belanger, C. E. Swezey.

Dr. H. A. Brown is off for three weeks in New Orleans, El Paso and Los Angeles.

J. T. Reese has located at McSermott.

Dr. Morrison has returned from a vacation in California towns.

Dr. McKenzie went with the Shriners to Tonopah, and spent the week visiting there and in Goldfield.

Dr. Ahlers has opened offices in the Washoe Bank Building, Reno.

Dr. Hawkins is building a hospital at Gardnerville.

Dr. Walker spent a short vacation in San Francisco.

BOOK REVIEWS

The Question of Alcohol. By Edward Huntington Williams, M. D., formerly Associate Professor of Pathology, State University of Iowa, and assistant physician in the New York State Hospital Service. The Goodhue Company, Publishers, 120 West 32nd St., New York. Price, cloth, 75c.

This book is of no value as a medical book and would be better if used as an anti-prohibition campaign argument. We fail to see any excuse for its publication. R. E. B.

The Practice of Surgery. By James G. Mumford, M. D. 4to. Cloth. Pp. 1032. Illustrated. 2d Edition. 1914. W. B. Saunders Co., Philadelphia and London, Publishers.

The new edition has been increased by 17 pages. Some of the chapters, that on shock for instance, have been modified; others, notably the one on abdominal ptosis, have been amplified and practically rewritten. The illustrations remain unchanged. The book is entertaining and lively, the descriptions sharp and vivid; too much so if anything. One often has the impression that the author goes out of the way of plain narration to force a point of style. A little too much Boston. There are a number of drier books on surgery that are more useful. L. E.

Blood Pressure in Medicine and Surgery. A Guide for Students and Practitioners. By Edward H. Goodman, M. D., Associate in Medicine in the University of Pennsylvania. 12mo, 226 pages, illustrated. Cloth, \$1.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

Goodman's book is somewhat of a disappointment to the critic. Although Goodman has compiled the literature on blood pressure fairly well, his own observations on the practical side are few and have not added much to the work of others. In his résumé he has accepted and approved all work and reports with equal consideration. We are still looking forward to a "masterpiece" on blood pressure. What has been done on this subject is put together by Goodman and his book would be worth reading for those who wish to read such a summary. R. B. T.

A Handbook of Psychology and Mental Disease for use in training schools for attendants and nurses and in medical classes, and as a ready reference for the practitioner. By C. B. Burr, M. D., Medical Director of Oak Grove Hospital (Flint, Mich.) for Mental and Nervous Diseases, etc., etc. Fourth edition, revised and enlarged with illustrations. Philadelphia, F. A. Davis Company, Publishers. 1914. Price \$1.00.

While the usual small medical book is, as a rule, seldom worthy of much consideration, particularly when an entire specialty is included in its scope, an exception must be made in favor of this book of Doctor Burr's. Without analyzing its contents it will suffice to say that it bears the same relation to the large and more exhaustive works that the well-packed suitcase of the experienced traveler bears to the enormous trunks of a tourist on his first trip. Psychology and insanity are excellently analyzed, classified and discussed in the 200 pages of text in such a way as to appeal to the student and to the man who takes up the specialty of the care of the insane. The section on the treatment of insane patients is very valuable and conforms with the best modern and humane ideas.

G. H. T.

INFECTION AND RESISTANCE.

An exposition of the biological phenomena underlying the occurrence of infection and recovery of the animal body from infectious disease by Hans Zinsser, Professor of Bacteriology at the College of Physicians and Surgeons, Columbia University, New York, with a chapter on "Colloids and Colloidal Reaction" by Professor Stewart W. Young of Stanford University. New York. The Macmillan Co., 1914.

With his book on "Infection and Resistance," Zinsser fills a distinct want in American medical literature. There is no question that the modern physician must be well informed in this subject, if he wishes to deal intelligently with the many problems presented to him by infectious disease, and still there is not available in English a treatise dealing with these problems thoroughly and exhaustively from the point of view of one who has an intimate personal knowledge of the underlying facts. The author has succeeded in presenting a very difficult subject in an uncommonly clear and precise manner and it is to be hoped that many medical students for whom this book is primarily written will accept it as a reliable and at the same time most interesting guide in what at first glance must appear to their untrained eyes as a wilderness indeed. Moreover many physicians—clinicians as well as workers in bacteriology and allied fields—will be glad to consult the pages of Dr. Zinsser's excellent book on moot questions and will receive new insight into these fascinating problems and inspirations to new productive work along these lines. Professor Young's chapter on colloids is also most interesting and suggestive.

W. O.

General Medicine. Practical Medicine Series. 1914. Vol. VI. Edited by Frank Billings and J. H. Salisbury. Published by the Year Book Publishers. 1914. Price, \$1.50.

These little books serve a very useful purpose in giving the busy practitioner a digest of articles which have appeared in medical journals for the preceding year. In two or three hours a man can get a good idea of the latest views in any one branch of medicine. About the only criticism we would suggest is that more care be taken in the choice of articles to be abstracted and that more of the foreign literature be used. For instance, after our most successful clinicians have for years been showing that the only way to break the vicious circle of dilatation of the stomach, self-

starvation, etc., is by overfeeding, an article is abstracted—as advanced and up-to-date—in which the author advocates gastric lavage and starvation again. This research was based on six cases. A slight elevation of the lower border of her stomach may or may not be a comfort to the poor woman but we do not see how it can give her renewed strength to go back and stand behind a counter or teach school all day. Those who elect to teach their fellow practitioners should guard them from false or ignorant prophets.

The large proportion of this volume is made up of abstracts from the Journal of the American Medical Association, a magazine which has already been seen by most of the men who are sufficiently concerned with the state of their medical education to buy these books. Very few of us, however, know what we should about the best that is issuing from the laboratories and clinics of Europe.

W. C. A.

Serology of Nervous and Mental Diseases. By D. M. Kaplan, Director of Clinical and Research Laboratories, New York Neurological Institute. W. B. Saunders & Co., Philadelphia.

With the thoroughness and unbiased attitude of a true scientist, Kaplan has given to the profession a book of inestimable value, at this time. The subject is naturally divided into four parts. Part 1 gives in detail the general consideration of the spinal fluid. Here the author, because of his large experience, has been able to simplify the examination for proteid content of the spinal fluid by presenting a very simple method of his own, which the reviewer has used to a considerable extent. Kaplan's idea is to make the study of the spinal fluid so standardized that the general practitioner will look to the serologist for data which will be of inestimable value to him in diagnosis.

The Wassermann reaction and its various modifications are next taken up with the result that though he deprecates the use of methods which allow of "limits of errors," he states that "the chief function of the laboratory worker is not so much to detect every syphilitic, but to protect the non-luetic individual from a wrong diagnosis and useless treatment. He should consider himself, as expert, only when the number of positive reports on non-luetic sera approaches the zero mark and not when his results with positive material approach the 100 per cent. efficiency mark." I believe all clinicians should be wary of the "unerring" serologist.

Part 2 is an exposition of the serology of non-luetic nervous and mental diseases. As in Part 3 each disease is considered with especial reference to the cerebrospinal fluid findings and its serological formula. The author finds himself frequently called on to decide on the coexistence of tabes with other non-luetic diseases, e. g., multiple neuritis. The absence of a proper formula enables him to reach a decision which is usually finally substantiated.

Part 3 includes the serology of syphilitic nervous and mental diseases—a very important and well-presented section. Here the different luetic disorders of the brain and cord are taken up with differential diagnoses—a no mean feat for a serologist. Cases are followed to show the influence of therapy on the serological findings. Part 4 is a general consideration of the therapeutic use of salvarsan with many annotations from the author's personal experience with the drug.

The work as a whole finds a ready place with the neurologist and psychiatrist and should be a constant companion of the general practitioner, who will get much more out of his cases by a careful perusal of this book. Many excellent colored photographs adorn the work. An excellent bibliography, covering 37 pages, completes the volume.

J. M. WOLFSOHN.

SOCIETY REPORT

CALIFORNIA PEDIATRIC SOCIETY— NORTHERN BRANCH.

On October 6, 1914, a meeting for the organization of a pediatric society was held. At that time a northern branch was formed with the following officers: President, William B. Lewitt; Vice-President, Langley Porter; Secretary-Treasurer, William Palmer Lucas; Council, Adelaide Brown, one year; T. C. McCleave, two years, and H. H. Yerington, three years.

The Society has for its object the advancement of the study of infancy and childhood, and diseases as manifested at these ages. The number of members is not limited. Any registered physician in California may become a member, unless objected to by the Council, on application and payment of the membership dues. The membership will also include associate members, who will come under the same restriction. The entrance fee shall be \$3.00 and the annual dues for this year \$2.00, and hereafter the Council shall have power to change the amount of assessment from year to year.

At this first meeting a Constitution and By-Laws were adopted and it was decided to ask for the formation of a southern branch, which should have for its center Los Angeles.

The first meeting has been set for December 9th at 8:15 in the County Medical Library. The program will be as follows: Presidential Address by Dr. William B. Lewitt on the Scope and Work of the California Pediatric Society. The following papers will be read:

I. Some Sources of Error in the Diagnosis and Treatment of Lobar Pneumonia in Children. E. C. Fleischner.

II. Preliminary Report of the Morbidity of the Children's Clinic of the Associated Charities, which is under the Auspices of the Certified Milk and Baby Hygiene Committee of the Association of Collegiate Alumnae. F. M. Holsclaw and A. E. Rude.

III. The Dietetics of Constitutional Eczema. George D. Lyman.

It is hoped that anyone interested in child welfare problems will come to this meeting and join the Society. We will welcome all who are really interested in any phase of child welfare work.

The following physicians endorsed the organization of this Society:

Rachel L. Ash, Sanford Blum, Adelaide Brown, E. C. Fleischner, F. M. Holsclaw, William B. Lewitt, William Palmer Lucas, George D. Lyman, T. C. McCleave, Leo L. Meininger, Langley Porter, Dudley Smith, H. H. Yerington.

ORANGE COUNTY.

The regular monthly meeting of the Orange County Medical Society was held last evening in the sun parlor at the Orange County Hospital, with all the doctors of the county and their wives as guests of Dr. John Wehrly, secretary of the Society.

A mobile trip was taken to the new county hospital, where the guests were shown the new buildings and expressed enthusiastically their appreciation of the up-to-date equipment, lighting and ventilating system, etc.

After return was made to the hospital, Dr. Wehrly gave a clinic for the physicians and the regular routine business was transacted.

Dr. Wehrly was host, also, for the tempting refreshments served the company at the close of the meeting, when a social hour was enjoyed.

Those present were Dr. and Mrs. C. D. Ball, Dr. and Mrs. John L. Dryer, Dr. and Mrs. J. I. Clark, Dr. and Mrs. G. H. Dobson, Dr. and Mrs.

Utter, Dr. and Mrs. McKelop, Dr. and Mrs. Bryan, Dr. Ida Parker and Miss Scarritt, Dr. and Mrs. F. E. Wilson, Dr. and Mrs. Ward, Dr. and Mrs. Johnson, Dr. and Mrs. George Clark, Dr. and Mrs. H. M. Robertson, Dr. and Mrs. Harvey, Dr. and Mrs. Harry Zaiser, Dr. and Mrs. Janss, Dr. J. H. Domann, Dr. Violet, Dr. and Mrs. John Wehrly, Miss Katherine Rutherford, Miss Sturdevant, Miss Hazel Swall, Miss McAferty, Miss Treat, Miss Runnell and David Botroff.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of October the following meetings were held:

Medical Section, Tuesday, October 6th.

1. Demonstration of Case of Intrathoracic Dermoid Cyst (?). H. D'Arcy Power.
2. Nutritional Problems of the Newborn Infant (preliminary communication). W. P. Lucas. Discussed by S. Blum, H. H. Yerington and R. K. Smith.
3. High Caloric Feeding in Children with Typhoid Fever. H. H. Yerington. Discussed by W. P. Lucas and A. A. O'Neill.

Tuesday, October 13th.

(A joint meeting of the Bar Association of San Francisco and the San Francisco County Medical Society held in Kohler & Chase hall, and devoted to the discussion of the Medical Expert.)

1. The Expert Witness from the Standpoint of the Attorney. Oscar C. Mueller, Chairman of the Committee on Amendment of Laws, of the Los Angeles Bar Association.
2. The Status of the Medical Expert in American Jurisprudence. Andrew Stewart Lobingier, Chairman of the Committee on Laws Governing Expert Medical Testimony, Los Angeles.
3. Official Medical Experts. Wm. M. Cannon.
4. The Sociological Relationships of the Problem. R. S. Gray.

Surgical Section, Tuesday, October 20th.

1. Retrodisplacement of the Pregnant Uterus. L. I. Breitstein.
2. Gas Bacillus Infection. G. M. Barrett.
3. Crotalus Venom: Some Experiments with Antidotes. Saxton Pope.

Eye, Ear, Nose and Throat Section, Tuesday, October 27th.

1. Cases: (a) Polyp of Ear Protruding from the Auricle.
(b) Case of Ozena of 15 yrs. standing; Treated with Vaccine. C. F. Welty.
2. (a) Case showing normal Drum and Hammer intact, but totally deaf after acute Mastoid Operation.
(b) Acute Neuritis of the 8th, and possibly of the 7th, resulting from the administration of Salvarsan. H. B. Graham.
3. Paper: Optic Disks and Color Fields in Recognition of Syphilis of the Nervous System. Syphilis of the Third Generation. H. G. Thomas, Oakland. Discussed by P. Dolman, H. B. Graham, H. Barkan, and W. F. Blake.

SAN FRANCISCO POLYCLINIC SOCIETY.

San Francisco, Oct. 14, 1914.

Wednesday, October 7, 1914, at 8:30 p. m.:

1. Report of a case of Staphylococcus Albus Infection with Autopsy Findings. Dr. G. M. Barrett. Discussion by Dr. P. K. Brown and Dr. C. J. Teass.

2. Cases of Alveolar Infections with Reference to the Constitutional Manifestations. Dr. P. K. Brown. Discussion by the following dentists: Drs. Post, Ward, Day, Kelley, and Van Orden; and by the following members: Drs. Welty, Blum, Ryfkoegel, Douglas, Montgomery, and Krotoszyner.

HARRY P. ROBERTS, Sec'y.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. J. D. Dameron, Friday evening, September 25th. The following members were present: Drs. R. B. Knight, G. W. Walker, J. D. Dameron, F. P. Clark, H. E. Sanderson, J. T. Davison, C. R. Harry, W. J. Backus, W. F. Priestly, R. D. Cashatt, C. F. English, Mary Taylor, L. Dozier, Dewey R. Powell and R. T. McGurk.

The paper of the evening, "Thyroid and Its Relationship to Systemic Infection," was read by Dr. J. D. Dameron. It was an excellent resume of the current information at hand regarding the thyroid gland and its diseases, the doctor giving his own ideas regarding its relation to systemic infection in a very clear and well written paper. Dr. Knight was called upon to open the discussion and he in turn was followed by each of the members present, Dr. Dameron closing the discussion.

The meeting was then adjourned and the members invited to partake of refreshments.

R. T. McGURK, Sec'y.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Nonofficial Remedies.

HYPODERMIC TABLETS OF EMETINE HYDROCHLORIDE, Mulford.—Each tablet contains emetine hydrochloride, 0.016 gm. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Oct. 3, 1914, p. 1204).

ACNE VACCINE.—Marketed in boxes of 4 syringes containing 25, 50, 100 and 200 million killed bacilli. Also in boxes of 2 syringes containing 50 and 200 million killed bacilli; boxes of 6 ampoules containing 10, 25, 50, 100, 200 and 500 million killed bacilli, with a syringe; and boxes of 2 ampoules containing 50 and 200 million killed bacilli, with a syringe. E. R. Squibb and Sons, New York.

BACILLUS COLI COMMUNIS VACCINE.—Marketed in boxes of 4 syringes containing 100, 200, 500 and 1,000 million killed bacilli. Also boxes of 2 syringes containing 100 and 500 million killed bacilli and boxes of 2 ampoules containing 100 and 500 million killed bacilli, with a syringe. E. R. Squibb and Sons, New York.

BACILLUS PERTUSSIS VACCINE.—Marketed in boxes of 4 syringes containing 25, 50, 100 and 200 million killed bacilli. Also boxes of 2 syringes containing 50 and 200 million killed bacilli; boxes of 6 ampoules containing 25, 50, 100, 200, 300 and 500 million killed bacilli, with a syringe; and boxes of 2 ampoules containing 50 and 200 million killed bacilli, with a syringe. E. R. Squibb and Sons, New York.

PYOCYANEUS VACCINE.—Marketed in boxes of 4 syringes containing 100, 200, 500 and 1,000 million killed bacilli. Also in boxes of 2 syringes containing 100 and 500 million killed bacilli. E. R. Squibb and Sons, New York.

GONOCOCCUS VACCINE.—Marketed in boxes of 4 syringes containing 100, 200, and 500 million killed gonococci; boxes of 6 ampoules containing 50, 100, 150, 350, 500 and 1,000 million gonococci, with a syringe; and boxes of 2 ampoules containing 100 and 500 million killed gonococci, with a syringe. E. R. Squibb and Sons, New York (Jour. A. M. A., Oct. 3, 1914, p. 1204).

MENINGOCOCCUS VACCINE, IMMUNIZ-

ING.—Marketed in boxes of 3 syringes containing 100, 500 and 1,000 million killed meningococci. E. R. Squibb and Sons, New York.

MENINGOCOCCUS VACCINE, CURATIVE.—Marketed in boxes of 4 syringes containing 100, 200, 400 and 500 million killed meningococci. Also in boxes of 2 syringes containing 100 and 500 million killed meningococci; boxes of 6 ampoules containing 100, 100, 500, 500, 1,000 and 1,000 million killed meningococci, with a syringe, and boxes of 2 ampoules containing 100 and 500 million killed meningococci, with a syringe. E. R. Squibb and Sons, New York.

PNEUMOCOCCUS VACCINE.—Marketed in boxes of 4 syringes containing respectively 100, 200, 400 and 500 million killed pneumococci; boxes of 2 syringes containing respectively 100 and 500 million killed pneumococci; boxes of 6 ampoules containing 100, 100, 500, 500, 1,000 and 1,000 million killed pneumococci, with a syringe, and boxes of 2 ampoules containing 100 and 500 million killed pneumococci, with a syringe. E. R. Squibb and Sons, New York.

STAPHYLO-ACNE VACCINE.—Marketed in boxes of 4 syringes containing 100 million killed staphylococci and 25 million killed acne bacilli, 200 million killed staphylococci and 50 million acne bacilli, 400 million killed staphylococci and 100 million killed acne bacilli, and 500 million killed staphylococci and 200 million killed acne bacilli; boxes of 2 syringes containing 100 million killed staphylococci and 50 million killed acne bacilli and 500 million killed staphylococci and 200 million killed acne bacilli; boxes of 2 ampoules containing 100 million killed staphylococci and 50 million killed acne bacilli and 500 million killed staphylococci and 200 million killed acne bacilli, with a syringe. E. R. Squibb and Sons, New York.

STAPHYLOCOCCUS VACCINE.—Marketed in boxes of 4 syringes containing 100, 200, 500 and 1,000 million killed staphylococci; also in boxes of 2 syringes containing 100 and 500 million killed staphylococci; boxes of 6 ampoules containing 100, 250, 500, 500, 1,000 and 2,000 million killed staphylococci, with a syringe, and boxes of 2 ampoules containing 100 and 500 million killed staphylococci, with a syringe. E. R. Squibb and Sons, New York.

STREPTOCOCCUS VACCINE.—Marketed in boxes of 4 syringes containing 100, 200, 500 and 1,000 million killed streptococci; also in boxes of 2 syringes containing 100 and 500 million killed streptococci; boxes of 2 ampoules containing 100 and 500 million killed streptococci, with a syringe. E. R. Squibb and Sons, New York.

TYPHOID VACCINE, CURATIVE.—Marketed in boxes of 4 syringes containing 100, 200, 500 and 1,000 million killed bacilli. Also in boxes of 2 syringes containing 100 and 500 million killed bacilli; boxes of 6 ampoules containing 100, 100, 500, 500, 1,000 and 1,000 million killed bacilli, with a syringe and boxes of 2 ampoules containing 100 and 500 million killed bacilli, with a syringe. E. R. Squibb and Sons, New York.

TYPHOID VACCINE, IMMUNIZING.—Marketed in boxes of 3 syringes containing 500, 1,000 and 1,000 million killed bacilli. E. R. Squibb and Sons, New York.

SMALLPOX (VARIOLA) VACCINE (GLYCERINATED).—Each dose in separate aseptic sealed glass tube, with bulb and needles. Boxes of 5 and boxes of 10 tubes. E. R. Squibb and Sons, New York.

DIPHTHERIA ANTITOXIN.—Curative doses, marketed in syringes containing 2,000, 3,000, 4,000, 5,000, 7,500 and 10,000 units. E. R. Squibb and Sons, New York.

ANTIDYSENTERIC SERUM.—Marketed in vials containing 50 Cc. H. K. Mulford Co., Philadelphia, Pa.

ANTIPNEUMOCOCCIC SERUM, POLYVA-

LENT.—Marketed in syringes containing 20 Cc. Also marketed in vials containing 50 Cc. H. K. Mulford Co., Philadelphia, Pa.

ANTISTREPTOCOCCIC SERUM, POLYVALENT.—Marketed in vials containing 50 Cc. H. K. Mulford Co., Philadelphia, Pa.

ANTISTREPTOCOCCIC SERUM, SCARLATINAL, POLYVALENT.—Marketed in vials containing 50 Cc. H. K. Mulford Co., Philadelphia, Pa.

TYPHO-SEROBACTERIN, MULFORD, IMMUNIZING.—Each package contains 3 syringes of Typho-Serobacterin graduated as follows: First dose, 1,000 million killed sensitized typhoid bacilli; second dose, 2,000 million killed sensitized typhoid bacilli; third dose, 2,000 million killed sensitized typhoid bacilli. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Oct. 10, 1914, p. 1296).

CYMARIN.—A neutral, non-glycosidal substance obtained from *Apocynum cannabinum* and *Apocynum androsaemifolium*. Cymarin resembles amorphous strophanthin in its actions and is about equal to it in activity. It is more active when injected intravenously or intramuscularly than when given orally. Its uses are much like those of digitalis, but it is best suited in the form of Cymarin Tablets, 1/200 Gr. and Ampoules Cymarin Solution containing 1/60 Gr. cymarin. The Bayer Co., New York (Jour. A. M. A., Oct. 17, 1914, p. 1393).

MALTINE MALT SOUP EXTRACT.—Maltine containing potassium carbonate, 1.1 Gm. to each 100 Gm. and alcohol, 3.88 per cent. Maltine Co., Brooklyn, N. Y. (Jour. A. M. A., Oct. 24, 1914, p. 1479).

ACNE VACCINE.—Marketed in packages of six syringes each containing 12 million bacteria. Greeley Laboratories, Inc., Boston.

ACNE VACCINE.—Marketed in packages of four syringes containing, respectively, 5, 10, 20, and 40 million killed acne bacilli. Schieffelin and Co., New York.

COLON VACCINE.—Marketed in packages of six syringes each containing 1,000 million bacteria. Greeley Laboratories, Inc., Boston.

COLON VACCINE.—Marketed in packages of two vials each containing, respectively, 50, 100, 200, and 400 million killed bacteria. Schieffelin and Co., New York.

PYOCYANEUS VACCINE.—Marketed in packages of six syringes each containing 1,000 million bacteria. Greeley Laboratories, Inc., Boston.

PYOCYANO-BACTERIN.—Marketed in packages of four syringes containing, respectively, 50, 100, 200 and 400 million killed bacteria. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Oct. 24, 1914, p. 1479).

ANTIMENINGOCOCCUS SERUM (ANTIMENINGITIS SERUM).—Marketed in one aseptic glass cylinder containing 30 Cc. with special sterile needle and stylet. Also in one 20 Cc. vial. Schieffelin and Co., New York.

GONOCOCCUS VACCINE.—Marketed in packages of six syringes each containing 500 million bacteria. Greeley Laboratories, Inc., Boston.

GONOCOCCUS VACCINE, POLYVALENT.—Marketed in separate syringe packages containing, respectively, 50, 100, 200, 400 and 1,200 million killed bacteria. Schieffelin and Co., New York.

PNEUMOCOCCUS VACCINE.—Marketed in packages of six syringes each containing 500 million bacteria. Greeley Laboratories, Inc., Boston.

STAPHYLOCOCCUS ALBUS VACCINE.—Marketed in packages of six syringes each containing 1,000 million bacteria. Greeley Laboratories, Inc., Boston.

STAPHYLOCOCCUS AUREUS VACCINE.—Marketed in packages of six syringes each containing 1,000 million bacteria. Greeley Laboratories, Inc., Boston.

STREPTO-BACTERIN (HUMAN) POLYVALENT.—Marketed in packages of six ampoules

each containing 100 million killed bacteria; also in packages of six ampoules each containing 200 million killed bacteria. The Abbott Alkaloidal Co., Chicago.

STREPTOCOCCUS VACCINE.—Marketed in packages of six syringes each containing 500 million bacteria. Greeley Laboratories, Inc., Boston.

SCARLET FEVER TREATMENT.—Marketed in packages of four vials containing respectively 50, 100, 200 and 400 million killed bacteria.

TYPHOID BACILLUS VACCINE.—Marketed in packages of six syringes, each containing 1,000 million bacteria; also in packages of six syringes containing respectively 100, 200, 400, 600, 800 and 1,000 million bacteria. Greeley Laboratories, Inc., Boston (Jour. A. M. A., Oct. 31, 1914, p. 1577).

SEROBACTERINS.—While objection may be made to the sensitized living bacteria used by Besredka because there is always an uncertainty as to the action of living bacteria in the animal body, such danger cannot be attributed to the "serobacterins" because they contain dead bacteria, and so far as known, can do no more harm than other dead bacteria—in fact it is claimed that they are preferable to other vaccines because the toxic products of the bacteria, other than the immunizing properties, have been largely removed. It must be said, however, that these preparations are still in the experimental stage. In great part, careful clinical observations will decide that the serobacterins are really superior to ordinary vaccines (Jour. A. M. A., Oct. 3, 1914, p. 1223).

LACTIC ACID FERMENTS.—There is a large amount of literature to the effect that the *Bacillus bulgaricus* hinders putrefaction in the intestinal canal. While there may be some question as to a greater success in securing the implantation of this bacillus by administering it in "liquid cultures" the report of the Council on Pharmacy and Chemistry shows that such a culture is likely to reach the consumer in a more active state than one in the form of tablets (Jour. A. M. A., Oct. 3, 1914, p. 1223).

ACTION OF SODIUM CACODYLATE.—Containing its arsenic in organic combination and in the pentavalent state, which becomes therapeutically active only as it is reduced to the trivalent inorganic state, sodium cacodylate is so slightly toxic that therapeutic doses do not give rise to toxic symptoms. There is nothing in the literature to show that sodium cacodylate has a special action on the eye and blindness from its administration need not be feared (Jour. A. M. A., Oct. 3, 1914, p. 1223).

USE OF PARAFFIN OIL.—While it is recognized that cancer may be caused by chronic irritation, the paraffin oil used medicinally is bland and non-irritating and there is no reason to suppose that its continued use would cause cancer. A good quality of oil may be obtained by prescribing Paraffinum Liquidum or Petrolatum Liquidum Grave (Jour. A. M. A., Oct. 17, 1914, p. 1411).

GLYCOTHYMOLINE REFUSED RECOGNITION.—A report of the Council on Pharmacy and Chemistry cites Glycothymoline as a typical illustration of a "patent medicine" advertised to the public through the doctor. Different formulas have been ascribed to Glycothymoline by its promoters from time to time—but whatever the exact composition of this secret nostrum may be, it has been definitely shown that it is but a weak antiseptic solution. Nevertheless, the advertising circulars recommend the use of Glycothymoline in such serious conditions as diphtheria and ophthalmia of the newborn. Glycothymoline is in conflict with Rules 1 and 4 of the Council on Pharmacy and Chemistry, because of its indefinite composition and the method of advertising it to the public. It is in conflict with Rules 10, 6 and 8, in

that it is an unscientific, shot-gun mixture sold under unwarranted therapeutic claims and under a misleading name (Jour. A. M. A., Oct. 10, 1914, p. 1313).

PHENOLAX WAFERS.—These are tablets said to contain phenolphthalein 1 gr., "aromatics" and sugar enough to make five grains. It is a question what purpose the "aromatics" and sugar serve, perhaps these are to mislead the unthinking to believe that this combination has some mysterious value over phenolphthalein itself (Jour. A. M. A., Oct. 17, 1914, p. 1410).

PAPINE (Battle and Co.).—This is a simple aqueous alcoholic solution of morphine, 1 grain to each ounce. It is exploited under the utterly unwarranted claim that it does not nauseate, constipate nor create a habit (Jour. A. M. A., Oct. 17, 1914, p. 1411).

CELERINA AND ALETRIS CORDIAL (Rio Chemical Co.).—Celerina is a shot-gun mixture said to contain, in addition to 42 per cent. of alcohol, kola, viburnum, celery, cypripedium, xanthoxylum and aromatics. Aletris Cordial is said to contain 28 per cent. alcohol (more than is found in wine) besides three obsolete and valueless drugs, aletris, helonias and scrophularia. Whatever virtue there is in Celerina and Aletris Cordial is derived from the alcohol (Jour. A. M. A., Oct. 17, 1914, p. 1411).

GINSENG.—Despite the fact that the peculiar man-shaped root of ginseng has no medicinal value so far as science can determine, the Koreans for decades paid their tribute to China in ginseng. In China it is reported as a cure for all ills that human flesh is heir to and has a special reputation as an aphrodisiac. Perhaps there is no better illustration of the virtues of aphrodisiacs in general than the fact that the Chinese are quite sure of the marvelous efficacy of ginseng though no evidence of its virtues can be obtained in the West (Jour. A. M. A., Oct. 24, 1914, p. 1486).

THE EXHIBITS WILL BE ON HAND.

Costly exhibits from Europe reach San Francisco. Four car loads from Rotterdam. Consignments from England, Ireland, France, Luxemburg.

Five carloads of social economy exhibits include those made under the supervision of Dr. Philip Rauer of Stuttgart, Germany.

No foreign nation has withdrawn from its participation.

Total foreign funds show increase of more than one million dollars since the outbreak of the war.

Hundreds of tons of Exhibits en route to San Francisco from Japan, China and other countries.

On September 24th Secretary of State William Jennings Bryan issued a formal announcement to the effect that no foreign country had withdrawn from its participation in the Panama-Pacific International Exposition.

Since Mr. Bryan's announcement many large consignments of costly exhibits from Europe and other countries have reached San Francisco and a number of chartered steamers will soon leave with great loads of exhibits for this city.

ARMY MEDICAL CORPS EXAMINATIONS.

The Surgeon-General of the Army announces that preliminary examinations for appointment of First Lieutenants in the Army Medical Corps will be held on January 11, 1915, at points to be hereafter designated.

Full information concerning these examinations can be procured upon application to the "Surgeon-General, U. S. Army, Washington, D. C." The essential requirements to secure an invitation are

that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of Doctor of Medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training as an interne, after graduation. The examinations will be held simultaneously throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

In order to perfect all necessary arrangements for the examinations, applications must be completed and in possession of the Adjutant-General at least three weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There are at present twenty vacancies in the Medical Corps of the Army.

CALIFORNIA STATE BOARD OF HEALTH CIRCULAR ON PELLAGRA.

To City and County Health Officers:

There has been a marked increase, recently, in the number of deaths from pellagra in California, although very few cases of this disease have been reported by health officers.

As you are aware, the cause of this disease is unknown, although it is generally supposed that it is due to the use of spoiled corn, or a fungus upon the corn.

I have to ask that you call the attention of the physicians in your territory to the apparent increase in the number of cases of this disease, and that you ask them to be very alert in the detection of such cases, being careful to gather all possible data concerning the etiology of all cases that may come under their observation.

I shall be pleased to receive a report from you as soon as possible, stating whether there are any cases in your territory at the present time, or if any have appeared during the past few years.

Respectfully,
DONALD H. CURRIE,
Secretary.

"NOTHING NEW UNDER THE SUN."

To the State Journal of Medicine: It may be of interest to Dr. L. M. Ryan, of Banning, Calif., to learn that the rapid and convenient method of counter-staining for tubercle bacilli with a saturated alcoholic solution of methylene blue, regarded as an original idea with him, has been known and used by myself for at least twenty years. So long in fact, that I have forgotten the name of the technologist who first suggested this simplification and from whom I gladly adopted the method of a means of eliminating the decolorization-method of the Ziehl-Neelsen and Gabbett processes with the dilute acid-solutions.

Yours very truly,
JOHN C. SPENCER.

SOME OF OUR DISEASES.

Editor of State Journal:

I do not know whether you are in the habit of replying to letters from physicians' wives, but as I am deeply interested in my husband's work and a lover of fair play in all things, I hope you will show me the courtesy to reply. My husband has said, upon inquiry from me, that these things can not be helped, consequently they must be endured, but if that be true, what is the use of our societies as far as protection is concerned?

I know, from reading the different journals that come to us, that neither the profession as a whole nor the medical societies stand for the things that

I am about to relate, why, then, do they permit men to do them and still be members of the county, state and national societies? Not consistent, is it?

Why do the A. M. A., the state and county societies, stand as they do regarding fee splitting and allow their members to do it? Is it ethics? Of course, the societies would reply, we do not allow it, they do it without our knowledge. Individually, members in the society know it is going on, but do not wish the notoriety involved in bringing it up. That is not the proper attitude.

A prominent physician and surgeon (?) in our town offered to give my husband 50 per cent. of all operative work brought to him. Another physician who takes his work there and receives his portion (so he says), approached a D. O. here and said he was foolish to take his work to * * * when he could get half here. "Of course," he added, "I do not go much on them over there, but it's the money we are after." Now, is it not a shame that these things are done by members of medical societies, and go out from the profession and are discussed by the laity? Is it any wonder that the people are clamoring for Christian Science, drugless healing and many other things that are less expensive and many times more satisfactory?

Do the honest, conscientious men in the profession have to submit lest they are accused of having personal reasons for standing for what is right and honorable?

Another physician here approached my husband, saying, of a certain prominent man in * * *, "He is no hog, he is fair."

Another surgeon from * * * comes down here and has done abdominal operations in private homes, splitting the fee with the Dr., so rumor has it.

Another physician's wife says: "No, my husband does not split fees, but when he operates for another medical man they divide up on the case." Ethics, perhaps.

Now, in regard to abortions. When one physician has been asked to "help a woman out of trouble," and he refuses, but still keeps the case in mind and in a few days finds the woman is ill, another physician in attendance, a few days after the husband comes to the first physician, saying that everything is all right. "It was only a little cold," what can be done? Her intimate friend also returned and said she had succeeded in getting it done by one of our six regular physicians.

When we know of several such cases, can we doubt but that some one performs abortions here in our little town of four thousand?

Now, * * * County Society has a committee who secretly and quietly investigate such rumors without divulging the informant's name. Does the state do the same? If not, what can be done?

Another question: Will the medical societies sanction their members going from house to house making medical examinations for lodge insurance for one dollar, when it is supposed to be an office call? Or for doing contract work, such as a monthly salary and the fees which are about half of the regular ones, going to the union or company or whatever it is—not the insurance companies. It seems that the medical men have been forced to do their work. Why? Because they will not stand together and some one will do it, so all may as well have their share. For the same reason many otherwise conscientious men split fees, because some will do it, and if some, why not all? The laity does not understand this to be morally wrong. They should be educated. A patient goes to a surgeon of some reputation and training. His price for the operation seems large. She reports to her family physician, oftentimes he knows of a surgeon (?) who hasn't the reputation or name, but his work is just as good. Why not take his card and see him? His prices are

reasonable (almost a bargain). The patient follows the family physician's advice. Why, yes, he could do it for seventy-five dollars—about one-half what the surgeon asked. After all is over the would-be surgeon (?) divides up with the family doctor, who also gets the assistant's fee. Easy money. And why those operations very often seem to be as successful as those performed by men who have given years of study and who have had years of experience, I can not understand, unless there was no indication for an operation to begin with.

Now, all these things are happening here and the two or three honest men simply do their work and go on quietly, evidently unable to prevent them.

I am asking for a private answer. If it should be answered through the Journal, kindly withhold my name and name of the town.

Trusting that I have written in a worthy cause and that you will consider it, I am

Very truly yours,

MRS. J. W.

The Answer.

Dear Mrs. * * *

Your letter of the 27th inst. reaches me this morning, and I have read it over very carefully.

Possibly you may not realize it, but you have picked out three or four of the largest problems in medical sociology and have asked me to solve them for you offhanded!

For fifteen years I have talked, written and published matter relating to these abuses in our profession, but they continue to exist and they always will, for one reason, namely: Human nature is human nature. Honesty is merely a relative term. There is a certain amount of dishonesty in almost everyone, and you find the desire to get money or to get something in ways that are not strictly honest, in every class of society, from the tramp who steals a loaf of bread to the trust magnate who buys a legislature and steals other people's property to the extent of hundreds of millions. This being the case, I think you will see that, until human nature changes, there will always be physicians who will split fees and who will do all kinds of not strictly proper work in order to get money.

Your little community is not at all different from any other community, in that there are some physicians who live there who do abortions. Abortions have been performed since a time when the "memory of men runneth not to the contrary." They have probably been performed since the first woman became pregnant and desired not to have children, and they will be performed so long as women and men wish to avoid the responsibility of parenthood.

Contract practice, lodge work and similar things are evils within the medical profession, for which medical men are themselves alone responsible, but like many other things, they are evil in their abuses, while in their legitimate use, they are not necessarily wrong.

You asked why medical societies do not control these things, and I can only reply to you by saying that all medical societies officially condemn these things, but it is almost never possible to prove an accusation of guilt, because one man affirms, and another denies, and one man's word is as good as another's. It is almost never possible to secure absolute evidence.

I will take much pleasure in publishing your letter to me and also this answer to you, and I certainly will not make use of your name or the name of the city in which you live. If I can be of any assistance or encouragement to you in any way, please do not hesitate to call upon me.

Respectfully,

PHILIP MILLS JONES,
Secretary.

BOARD OF MEDICAL EXAMINERS, CALIFORNIA.

The following is a full report of applicants coming before the Board of Medical Examiners since January, 1914, session:

Passed Written Examination for Physicians and Surgeons.

Calif. Eclec. Med. Coll., Calif.; (5, 26, 1914), 82 6-9, 78 8-9, 78 2-9, 76 7-9, 75.
 Coll. of Med. Evangelists, Calif.; (6, 17, 1914), 89, 88 7-9, 78 3-9.
 Coll. of Phys. & Surgs., Calif.; (6, 4, 1914), 77.
 Hahnemann Med. Coll. of the Pacific, Calif.; (4, 25, 1914), 86 6-9; (4, 24, 1913), 80 5-9; (4, 25, 1914), 75 6-9, 75 4-9.
 Los Angeles Coll. of Osteopathy, Calif.; (6, 7, 1913), 81, 1, 75 8-9.
 Stanford, Leland, Jr., Univ., Calif.; (5, 18, 1914), 90 1-9, 86 1-9, 85 4-9, 84 6-9, 82 6-9, 82 1-9, 80 5-9, 79 1-9, 76 3-9.
 University of Calif., Med. Dept., Calif.; (5, 13, 1914), 90 1-9, 88 6-9, 88 5-9, 88 2-9, 87 8-9, 87 8-9, 87 8-9, 87, 86 5-9, 78 5-9, 76 8-9; (6, 20, 1913), 89 4-9.
 University of So. Calif., Coll. of P. & S., Med. Dept., Calif.; (6, 11, 1914), 92, 91 3-9, 90 4-9, 90 3-9, 90 2-9, 89 4-9, 89 4-9, 89 2-9, 87 7-9, 87 5-9, 87 2-9, 86 8-9, 86 7-9, 86, 86, 85, 83 6-9, 83 2-9, 83 1-9, 82 8-9, 82 6-9, 81 3-9, 76 8-9, 75, 75; (6, 12, 1913), 88 2-9, 84 2-9.
 Chicago Coll. Med. & Surg., Ill.; (6, 14, 1914), 81 8-9.
 Coll. of Phys. & Surgs., N. Y.; (6, 11, 1902), 75 4-9.
 Columbia Univ., Med. Dept., N. Y.; (6, 4, 1913), 76 8-9.
 Cornell Univ. Med. Coll., N. Y.; (6, 15, 1910), 83 7-9.
 Harvard Univ. Med. Sch., Mass.; (6, 20, 1912), 87, 82 8-9; (6, 28, 1911), 83; (1914), 82 1-9.
 Johns Hopkins Univ. Med. Sch., Md.; (6, 10, 1913), 83 3-9; (6, 10, 1913), 81 4-9.
 Medico-Chirurgical Coll., Pa.; (6, 5, 1914), 88 5-9.
 Royal Coll. of Surgs., Ireland; (7, 31, 1908), 75 5-9.
 Royal Univ. of Parma, Italy; (7, 10, 1900), 75 1-9 plus 14 years of practice—89 1-9.
 Trinity Univ., Med. Dept., Canada; (6, 1, 1901), 65 6-9 plus 11 years of practice—76 6-9.
 Univ. and Bellevue Hosp. Med. Coll., N. Y.; (6, 4, 1913), 83 4-9.
 Univ. Coll. of Med., Va.; (5, 11, 1899), 93.
 Univ. of Colo. Med. Sch., Colo.; (6, 3, 1914), 81 5-9.
 Univ. of Oreg., Med. Dept., Oreg.; (5, 3, 1914), 85 7-9.

Failed Written Examination for Physicians and Surgeons.

Calif. Eclec. Med. Coll., Calif.; (5, 26, 1914), 72 4-9, 70 3-9, 68 2-9; (6, 3, 1914), 71 8-9; (5, 22, 1913), 64.
 Coll. of Med. Evangelists, Calif.; (6, 17, 1914), 73, 72 4-9.
 Coll. of Phys. & Surg., Calif.; (6, 4, 1914), 68 6-9; (6, 1, 1904), 68.
 Cooper Med. Coll., Calif.; (4, 28, 1903), 73 2-9; (5, 8, 1907), 65 8-9; (1903), 60.
 Hahnemann Med. Coll. of the Pacific, Calif.; (1913), 73 1-9.
 Pacific Coll. of Osteopathy, Calif.; (6, 20, 1912), 72.
 Stanford, Leland, Jr., Univ., Calif.; (5, 18, 1914), 73 1-9.
 University of So. Calif., Coll. of P. & S., Med. Dept., Calif.; (6, 11, 1914), 73 5-9, 72 5-9, 70 1-9, 69 5-9.
 Barnes Med. Coll., Mo.; (11, 16, 1911), 63.
 Coll. of Med. & Surg., Ill.; (1, 18, 1911), 30 8-9.
 Denver & Gross Coll. of Med., Colo.; (6, 1, 1908), 67 3-9.
 Ky. Sch. of Med., Ky.; (7, 6, 1906), 68 7-9; (7, 14, 1906), 65 1-9; (7, 15, 1907), 48 2-9.
 Medical Coll. of Ind.; (4, 24, 1902), 60 6-9 plus 9 years of practice—69 6-9.
 Medico-Chirurgical Coll., Pa.; (6, 2, 1912), 69 5-9.
 Meharry Med. Coll., Tenn.; (4, 22, 1913), 67 7-9.
 Queen's University, Can.; (4, 28, 1914), 41 1-3.
 Woman's Med. Coll. of Penn.; (5, 18, 1904), 70.

Passed Written Examination for Drugless Practitioners.

Am. Sch. of Osteopathy, Mo.; (6, 29, 1901), 75 5-7 plus 11 years of practice—85 5-7; (6, 27, 1901), 78 6-7; (6, 23, 1904), 78 4-7; (6, 8, 1914), 76 1-2.
 Los Angeles Coll. of Osteopathy, Calif.; (1, 29, 1914), 78, 77 6-7, 76 6-7; (no date), 75 3-7.
 Mass. Coll. of Osteopathy; (6, 3, 1910), 73 2-7 plus 2 years of practice—75 2-7.
 Northern Inst. Osteopathy, Minn.; (8, 25, 1899), 65 3-7 plus 13—78 3-7.
 Pacific Coll. of Osteopathy, Calif.; (no date), 77 4-7.
 Still Coll. of Osteopathy, Iowa; (6, 14, 1906), 82 2-7.

Failed Written Examination for Drugless Practitioners.

Am. Sch. of Osteopathy, Mo.; (6, 8, 1914), 71.
 Los Angeles Coll. of Osteopathy, Calif.; (6, 10, 1910), 72 1-7; (6, 12, 1914), 71 6-7, 69 2-7, 69 2-7, 68 5-7, 68 4-7, 57 2-7, 55 2-7; (1, 29, 1914), 69 1-7, 68 2-7, 62 1-7, 60 4-7; (1, 26, 1912), 55; (6, 4, 1914), 51 4-7; (1, 30, 1913), 46 4-7.
 Northern Inst. Osteopathy, Minn.; (6, 27, 1901), 47 1-2 plus 12 years of practice, 59 1-2.
 Pacific Coll. of Osteopathy, Calif.; (6, 20, 1912), 68 5-7.
 Still Coll. of Osteopathy, Iowa; (6, 20, 1905), 65 1-7.

Certificates Granted to

One hundred and eighty-two reciprocity applicants and two honorably discharged U. S. surgeons.

New Licentiate—Medical Doctors.

Abbott, C. M. R.; Abbott, LeR. C.; Alexander, C. B.; Alexander, R. J.; Allen, John; Andrews, H. W.; Ashley, W. W.; Ashton, G. W.; Barbour, N. P.; Barkan, H.; Barker, Z. A.; Baxter, F. S.; Beck, H. E.; Behlow, W. W.; Bell, F., Jr.; Bemis, O. I.; Benedict, W. L.; Benson, S. L.; Bercovitz, N.; Berkeley, H. K.; Bishop, E. C.; Blatherwick, G. W.; Block, A.; Bogue, H. V.; Bonthus, A.; Bonoff, K. M.; Boody, F. J.; Bosworth, R. L.; Bransford, M. B.; Bull, E. C.; Burdick, W. N.; Burk, E. E.; Butler, F. A.; Butler, F. O.; Carey, G. H.; Cauthorn, F.

Cary, E. G.; Chadwick, B. C.; Choate, W. G.; Christal, C. H.; Citron, I. J.; Cleaver, J. M.; Clock, K. LeC.; Close, K. M.; Conroy, C. P.; Cooke, J. V.; Cowan, J. F.; Craig, J. B.; Crane, W. R.; Crisler, M. P.; Crook, H. W.; Crutcher, L. P.; Cummings, J. C.; Cunnane, P. J.; Cunningham, R. L.; Dabney, T. G.; Darragh, E.; Diehl, E. H.; Dienst, R. C.; Dieterle, K. L.; Dolley, F. S.; Dougherty, E. E.; Dunlap, F.; Dunn, A. B.; Dykes, J. P. H.; Edwards, F. A.; Ehlers, H.; Eisen, E. G.; Elliott, C. R.; Emmons, C. L.; Erkenbeck, J. W.; Evans, H. R.; Evans, J. G.; Felger, L.; Fewell, A. G.; Fisher, W. L.; Flannagan, L. E.; Forbes, H. S.; Foster, I. C.; Foster, W. D.; Fountain, E. R.; Franck, H. E.; Freeborn, J. A.; Frees, B. M.; Friedman, M.; Furness, G. B.; Gallagher, H. M.; Gardini, L.; Getzlaff, C. P.; Gilbert, W. H.; Gililand, M. McG.; Goodrich, G. E.; Greene, J. V.; Greengo, C. G.; Groth, G. W.; Guidinger, W. R.; Haake, C. H. G.; Hagman, G. L.; Hammon, G. M.; Harding, H. W.; Hartman, S. T. L.; Hayden, B. F.; Hench, J. M.; Henderson, R. G.; Henry, R. V.; Herselman, F.; Herzer, F. E.; Hews, L. DeW.; Hews, R. H.; Hibben, J. S.; Hidy, K. W.; Hill, R. B.; Hoag, R. B.; Hodson, W. H.; Holleran, W. M.; Horton, J. C.; House, L. C.; Humfreille, D. L.; Hund, E. J.; Hunt, V. C.; Hunter, M. G.; Hurst, S. T.; Iorio, D.; Jacquelin, S. S. de la R.; Jamieson, E.; Johnson, C. A.; Johnson, W. H.; Jones, F. C.; Juell, N. R. H.; Kaley, C. M.; Karn, B. R.; Keller, W. F.; Kittle, W. F.; Klotz, W. C.; Kuhns, F. H.; Larson, A. H.; Larson, C. F.; Lent, W. G.; Lessem, A. M.; Lewis, E. G.; Locke, E.; Lorimer, J. H. D.; Lund, J. L.; McCreery, R. L.; McGuffine, R. K.; McKee, W. C.; McKenna, W. J.; McMakin, W. B.; McManus, F. P.; McPeeters, E. R.; McPeeters, G. C. H.; Mace, L. R.; Marple, J.; Marshall, M. Y.; Marvin, L. B.; Matter, L. E.; Mattson, A. S.; Metcalf, W. B.; Meyers, A. E.; Middleton, G. W.; Miller, C. H.; Minney, G. M.; Misch, H. B.; Mock, D. C.; Moore, J. E.; Moore, J. J.; Moore, W. D.; Moore, W. McK.; Moore, W. O.; Morris, C. L.; Morrison, W. A.; Morse, J.; Mosher, C. N.; Moss, B. J.; Mueller, O. H.; Nast, E. H.; Nelson, C. V.; Nightingale, Z. E.; Norton, O. D.; Oliver, J. R.; O'Malley, G. M.; O'Reilly, E. F.; Osher, J.; Parker, T. A.; Patrick, M. A.; Phillips, G. W.; Phillips, M. H.; Pierce, G. W.; Plisor, O. P.; Poole, R. E.; Porter, G. S.; Post, J. O.; Pratt, G. H.; Pruett, J. F.; Raeder, O. J.; Rankin, A. H.; Raymond, A.; Ream, W. R.; Reed, W. A.; Rees, C. E.; Relihan, F. H.; Renfrew, F. C.; Roeder, G.; Rose, H. DeW.; Rose, L. M.; Rosenkrantz, E.; Rosson, R. W.; Rowe, A. H.; Ruslon, E. T.; Ryder, W. B.; Sandall, L. B.; Schneerer, T. C.; Scholz, A. M.; Schottstaedt, W. E. R.; Seeburger, K. E.; Seleck, E. E.; Shaw, J. H.; Shaw, W. L.; Shavnin, J.; Siefert, A. L. C.; Sloane, J. B.; Smith, A. P.; Smith, C. E.; Smith, M. B.; Smith, R. L. I.; Smith, W. E.; Snyder, A. D.; Spalding, J. B.; Sprague, S.; Spring, L. G.; Sproat, S. McC.; Stanton, F. E.; Steele, G. H.; Stevens, C. S.; Stevens, D. A.; Stolz, H. R.; Swackhamer, C. R.; Swetnam, C. R. K.; Tarleton, W. A.; Thomas, R. E.; Thomas, R. W.; Thompson, G. E.; Thorner, M.; Todd, E. B.; Todd, H. A.; Tompkins, G. N.; Tweedie, A. M.; Vanderhoof, H. W.; Waggener, H. A.; Walker, P. McH.; Walo, T. J.; Walters, C. M. C.; Wanderer, A. E. A.; Warner, M. F.; Waterman, O. M.; Waters, O.; Waters, E. M.; Weir, J. J.; Welsh, O. A.; White, W. M.; Williams, E. H.; Williams, L. J.; Wilmar, A. H.; Wilson, H. B.; Wolferman, A. G.; Woodard, D. S.; Young, C. S.

New Licentiate—Drugless Practitioners.

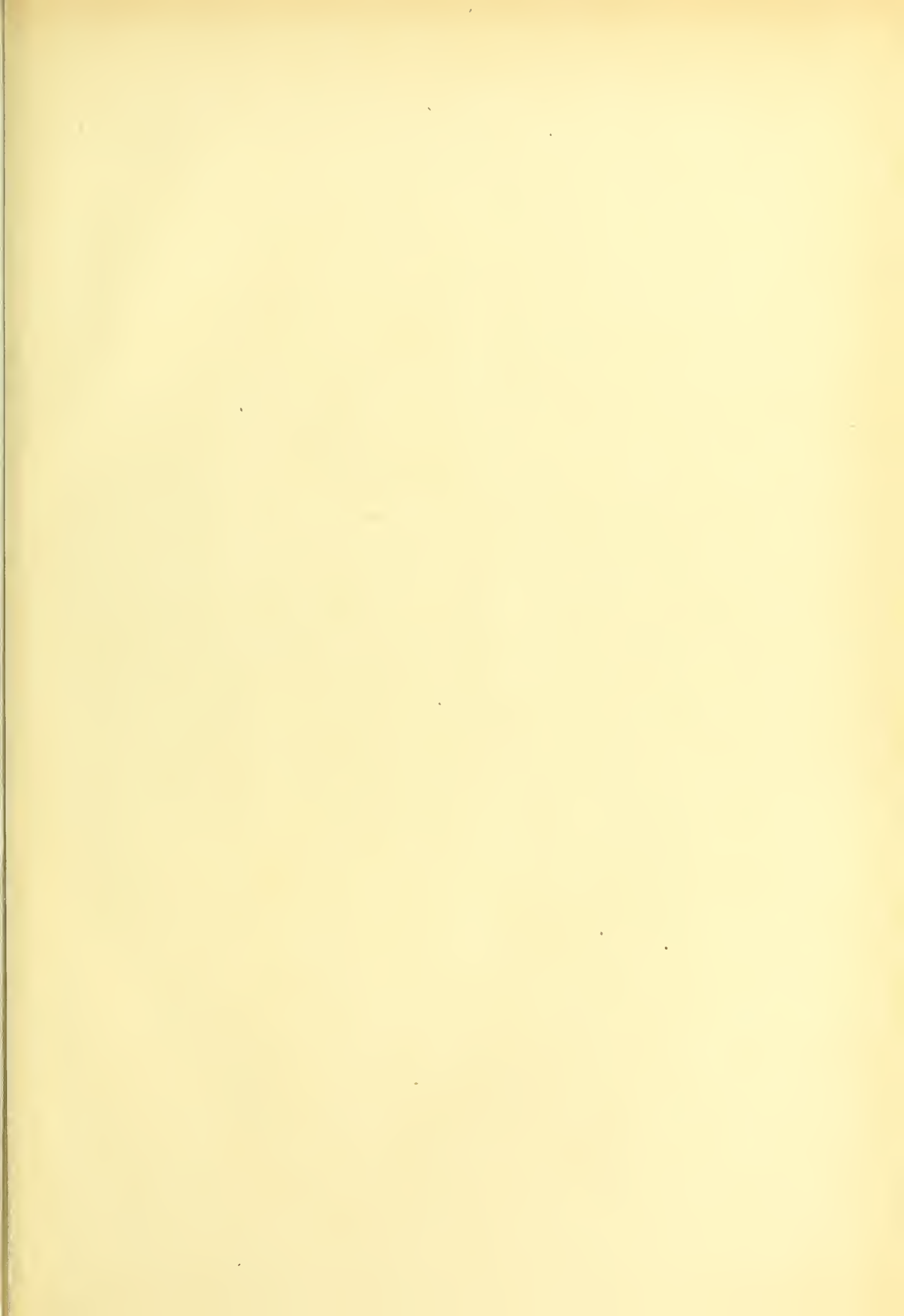
Armstrong, B. R.; Bartholomew, G. H.; Clark, C. E.; Eaton, M. W.; Hardy, C. B.; Hebb, F. J.; Huntington, G. L.; Lynd, N. R.; Lynd, W. B.; Metherell, W. A.; Perry, A. E.; Proctor, G. C.

NEW MEMBERS.

Winter, Frank E., Santa Ana.
 Zimmerman, A. F., Los Angeles.
 Day, Robt. V., Los Angeles.
 Trommald, E. A., Los Angeles.
 Evans, Chesley L., Los Angeles.
 Smith, Wilbur H., Long Beach.
 Hall, Edwin H., Los Angeles.
 Newton, E. Avery, Los Angeles.
 Rogers, Alfred R., Los Angeles.
 Terry, R. A., Long Beach.
 Newman, W. H., Long Beach.
 Williams, Edw. H., Los Angeles.
 Reum, C. G., Los Angeles.

DEATHS.

McNulty, Fred. J. Yreka.
 Foley, R. E., Stockton.
 Huntington, Sam'l. David (died in Milwaukee).
 Grimes, Warren V., Pacific Grove.
 Lagan, Hugh, San Francisco.
 Hammer, A. W., formerly of Arbuckle, Cal., died in Chicago, Ill.
 Carico, J. W., Cloverdale.
 Cook, Alonzo G., Long Beach.
 Welch, Harriet J. A., San Francisco.
 Stone, T. W., Los Angeles (died in Stockton, Cal.).
 Keeney, Jas. Ward, San Francisco.





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